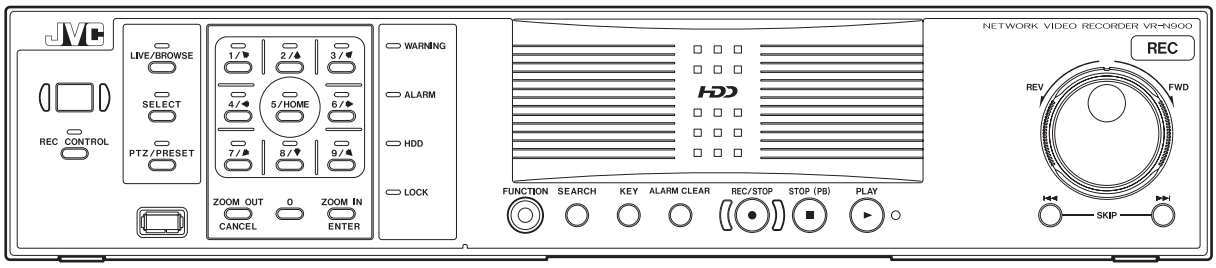
JVC

NETWORK VIDEO RECORDER

VR-N900U INSTRUCTIONS



Powered by Milestone

Please read the following before getting started:

Thank you for purchasing this JVC product.

Before operating this unit, please read the instructions carefully to ensure the best possible performance.

When this device is used as a general household, there is a possibility of radio disturbance to the radio and television receiver etc.

For Customer Use:

Enter below the Serial No. which is located on the body.

Retain this information for future reference.

Model No. VR-N900U

Serial No.

LST0497-001A

Hard Disk Drive

The distance between the head and disk that read and write data on the hard disk drive (hereinafter known as the HDD) is a miniscule 0.02µm. Vibrations and physical shocks to the HDD may therefore result in the head coming into contact with the disk, producing dents and scratches to its surface. This will consequently prevent data from being read, and will result in disk crashes if use is continued. It is therefore necessary to handle the recorder with great care.

■ **Installation and Changing the Location of Installation**

- Do not move the recorder or commence the installation process when the power is turned on or immediately after the power has been switched off (for approximately one minute) under any circumstances. (The HDD will continue to rotate due to inertia for a few moments after the power has been switched off, and vibrations or physical shocks will result in damage.)
- Wrap the recorder in protecting packing to prevent physical shocks.

■ **Handling**

- Handle this equipment with care. Do not subject it to physical shock.
- Do not unplug the power cord during recording or playback, or when the HDD is being accessed.

■ **It is recommended that an UPS (Uninterruptible Power Supply) is used when installing additional external hard disk drives to make sure the system remains stable.**

■ **If a power failure occurs while using utilities, operation of the equipment may be disabled even if it is connected to the UPS.**

■ **Please note that we will not provide compensation for any failure during recording or playback due to defects in this equipment or the hard disk drive.**

■ **Please note that recorded images will be erased when replacing hard disks. Note that there are cases where recorded images may be erased when software is upgraded.**

■ **Use only hard disks recommended by JVC and use only our service to replace hard disks.**

Consumable Item

■ The hard disk is a consumable item. Replacement is recommended after 10000 hours of use (if use in a 25°C environment). For information on maintenance planning and costs, consult your nearest JVC dealer.

■ The fan motor is a consumable item. Replacement is recommended after 30000 hours of use (if use in a 25°C environment). For information on maintenance planning and costs, consult your nearest JVC dealer.

How to Read The Instructions

■ About the VR-N900U document

The two documents shown below are available.

(1) STARTUP GUIDE
A STARTUP GUIDE booklet is bundled with VR-N900U. Also, a STARTUP GUIDE is available as a PDF file which is on the CD-ROM.

(2) INSTRUCTIONS (This PDF)
The INSTRUCTIONS is available as a PDF file which is on the CD-ROM.

■ How to Read the Symbols

CAUTION	Indicates points to note when operating the recorder.
Note	Indicates useful information, such as features and restrictions on use.
☞	Indicates a reference page or reference item.

■ Contents of this Manual

● The contents of this manual are the copyright of JVC. They may not be reproduced in part or in whole without the permission of JVC.

● All product names stated in this manual are trademarks or registered trademarks of their respective companies. Marks such as ™, ® and © are omitted in this manual.

● Milestone and XProtect Enterprise are registered trademarks of Milestone Systems.

● Designs, specifications and other contents of this manual are subject to change without prior notice.

Contents

Introduction

Introduction 2

Preparation

System Connection Example 5
Alphabet Input and Mouse Pointer 6
Entering Characters with the Software Keyboard (Using a Mouse) 6
Operating the Mouse Pointer from the Front Panel for Character Entry (without Using a Mouse) 6
Clock Display 7
About Performance Meter 7
Changing monitor resolution 7
Setting/Canceling Operation Lock 7
Setting Operation Lock 7
Canceling Operation Lock 7

Basic Operation

Switching the Power On/Off 8
Switching the Power On 8
Switching the Power Off 8
Switching Operation On/Off by Pressing the Button on the Front Panel 8
Switching Operation On 8
Switching Operation Off 8
Switching Operation On/Off by the Rear Input/Output Terminals 9
Switching Operation On 9
Switching Operation Off 9
Login 9
Opening the Main Menu 10
Main Menu Contents 11
Using the VR-N900 Viewer 11
Viewing Live Images 12
Display the [Live Viewing] window 12
Selecting a View 12
Selecting a Camera 12
Using the PTZ Feature 13
Using Preset Positions 14
Other Useful Functions 14
Playing Back Recorded Images 16
Selecting a View 17
Searching for a Recorded Image 17
Playing Back, Skipping and Stopping Recorded Images 18
Adjusting the Playback Speed (Jog/Shuttle Playback) 20
Using Sequences 20
Displaying the Alerts List 20
Audio 21
Smart Search 21
Exporting Images and Audio 22
Printing the Recorded Images 24
Recording Camera Images 24
Recording Modes 24
Operations in Case of Power Failure 25
Selecting the Record Control Mode 25
Selecting the Manual Recording Mode 26
Specifying Recording Settings in Recording Control Mode 26
Specifying a Scheduler 26
Camera Administration 28
Setting the image quality 29
Screen Setup 30
About Groups and Views 30
Creating Groups and Views 30
Adding Cameras to a View 32
Adding Hot Spots (Enlarged Images) 32
Adding Carousels 33
Adding Matrix Content 34
Using Static Images (GIF files, JPEG files, etc.) 34
Using HTML Pages 35
Adjusting Camera Settings 35
Using Your Views on Different Computers 36
Customizing Joystick Setup 37

Applications

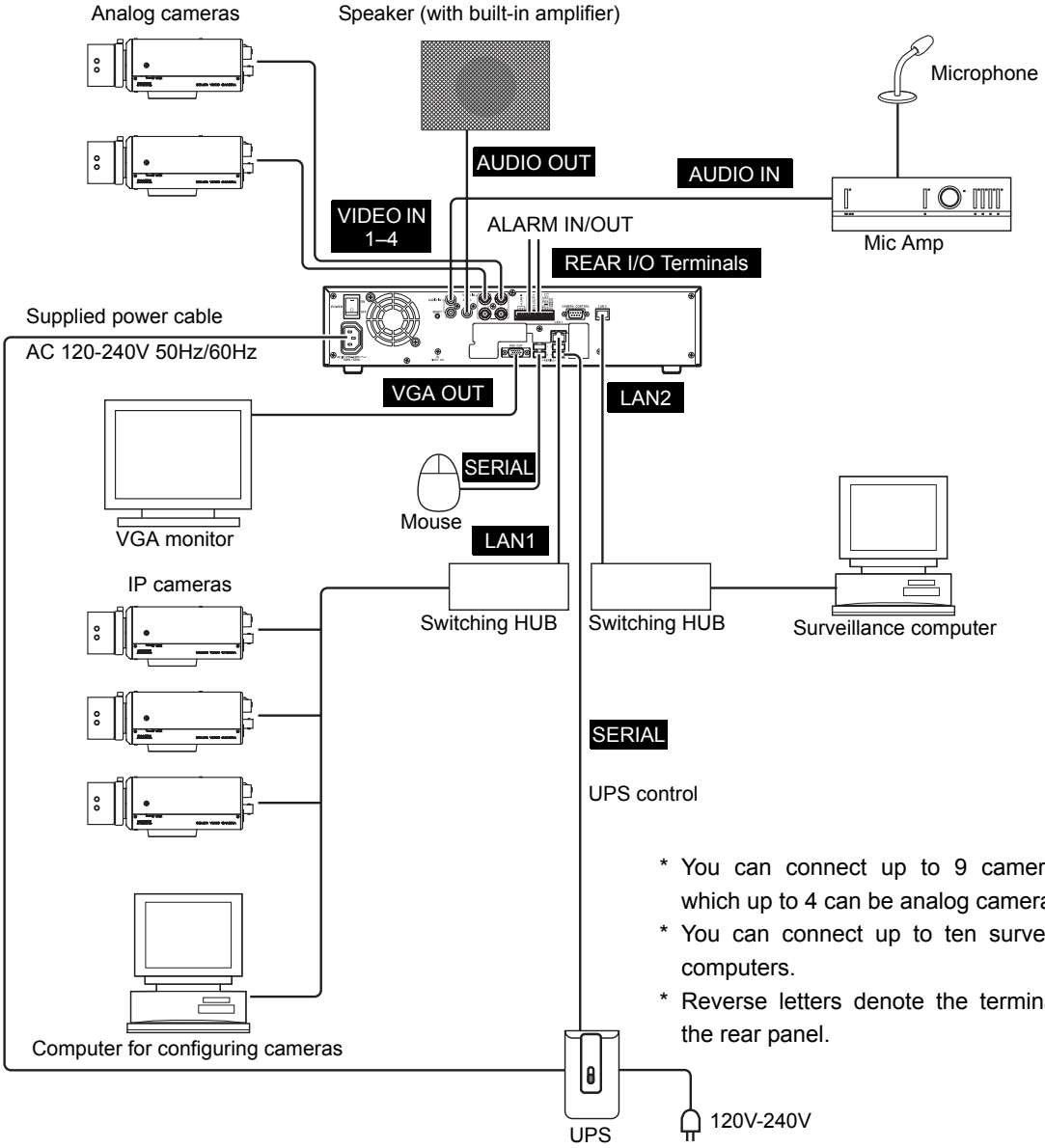
Camera Record Setting Window 38
Display the [Camera Record Setting] window 38
Adding Cameras 40
[Edit Device Settings] window 41
[Camera Settings for Device Name] window 42
Defining a PTZ Preset Position 43
Pausing the Recording Server 43
Display the [PTZ Preset Positions] window 43

Defining a Preset Position 44
PTZ preset positions on events 45
Auto PTZ Patrolling 45
Camera Input/Output Port and Events 47
I/O Setup 47
Configuring Event Buttons 50
Specifying Generic Events 51
Event Notification Settings 52
Specifying an Output Port 53
Output Settings for Cameras 53
Motion Detection Settings 54
You can configure the camera's motion detection. 54
Defining Exclusion Regions 54
Other Settings 55
General Settings 55
Email Settings 56
Archiving 57
Unit Setting 58
OS Setting 59
Flash Memory Utility 60
Auto Detect Setting 62
HDD Utility 63
Language Setting 64
Image Server Setting 64
Connecting to a Computer 67
System requirements 67
Computer Network Settings 68
Installing the VR-N900 Viewer on Your Computer 69
Log In to the VR-N900 Viewer 71
Using the VR-N900 Viewer 72
Log Out and Exit the VR-N900 Viewer 72

Others

Compatible Equipment 73
Compatible Network Cameras 73
Connecting a UPS 73
External Hard Disk Drives 74
Recording Time Schedule 75
Default (Initial) Value List 77
Troubleshooting 81

System Connection Example



* You can connect up to 9 cameras (of which up to 4 can be analog cameras).
* You can connect up to ten surveillance computers.
* Reverse letters denote the terminals on the rear panel.

The following operations are possible with this system.

- Surveillance (live image recording/playback) by connecting up to 9 cameras
- Checking recorded images on the VGA monitor
- Recording/playing sound
- Alarm recording
- Remote monitoring by computer

Note

- Connect LAN1 to the camera network.
- Connect LAN2 to the surveillance computer network.
- For details of the protocol and port number for the network cameras on the LAN1 network, refer to the network camera's user manual.
- The protocol and port number used on the LAN2 network are shown below.

  Surveillance computer: HTTP 80
  Email transmission: SMTP 25
  POP 110

CAUTION

- Connect the IP camera after having turned off the system and connected devices.
- Set the IP address of camera to 192.168.0.xxx. When setting the IP address of camera other than 192.168.0.xxx, you must also change the IP address of LAN1. As for the modification method of the camera's IP address, refer to the instruction manual of each camera.
- Do not connect LAN1 to the internet. If the internet is busy or the relay equipment fails, you may not be able to save important camera images. To maintain full recording capacity, it is recommended that a dedicated network be used. Be sure to connect the LAN1 camera network to the same segment. (Do not use the address translation of NAT and NAPT etc. or a router.)
- If you connect LAN2 to the internet from a surveillance computer, you will need to configure IP Masquerading.
- Communication between LAN1 and LAN2 is not possible. Nor is it possible to configure a camera connected to LAN1 from the surveillance computer connected to LAN2. In order to configure a camera connected to LAN1, it is necessary to connect the computer for configuring cameras to LAN1.
- LAN1 and LAN2 are incompatible with QoS. Sound may not be played normally depending on the condition of the circuit.
- The default LAN1 IP address is 192.168.0.253 and the default LAN2 IP address is 192.168.1.253. You can change the address in the [OS Setting] window. (☞ Page 59) In the VR-N900U, analog input circuitry is considered as a network encoder (IP video server) and the IP address 192.168.201.12 is set by default. To change the LAN1 or LAN2 IP address, specify an address other than 192.168.201.0 - 192.168.201.255. Make sure that you do not use the same segment in the LAN1 and LAN2 addresses.
- If a single IP camera is registered to multiple VR-N900U units, recording may not be carried out normally or improper camera operations, such as PTZ control, may result. It is recommended that a single IP camera is registered and controlled for PTZ operations by a single VR-N900U.
- Be sure not to connect a broken hub, router or deteriorated network cable etc. The system may not operate properly.
- It is not recommended to connect to a keyboard.

Alphabet Input and Mouse Pointer

You can enter letters of the alphabet and move the mouse pointer using the buttons on the front panel, but it is easier to make complicated settings and enter letters if you connect a mouse.

- It is not recommended to connect to a keyboard.

Entering Characters with the Software Keyboard (Using a Mouse)

You can use the software keyboard to enter letters of the alphabet with the mouse.

1 Press the [KEY] button.

- The software keyboard will appear.
- Press the [KEY] button again to close the software keyboard.

2 Move the mouse pointer over the letter on the software keyboard that you want to enter.

3 Click the letter on the software keyboard that you want to enter.

Note

- You can move the software keyboard by dragging any portion of the keyboard other than the keys with the mouse.
- To drag the software keyboard from the front panel, press the arrow buttons on the keypad while holding down the [ZOOM IN/ENTER] button.

CAUTION

- You can move the cursor with the keypad when the software keyboard is displayed.
- [ZOOM IN/ENTER] button is enabled with a click of a mouse when the software keyboard is displayed.
- You cannot enter 2-byte character with the VR-N900U.

Operating the Mouse Pointer from the Front Panel for Character Entry (without Using a Mouse)

When a mouse is not connected, you can operate the mouse pointer from the front panel.

1 Press the [KEY] button.

- The software keyboard will appear.
- Press the [KEY] button again to close the software keyboard.

2 Move the mouse pointer with the keypad.

Pressing the [ZOOM IN/ENTER] button is the same as clicking at the position of the mouse pointer.

Clock Display

The VR-N900U has a clock display function that displays the current time on the screen.

1 Press the [2/▲] button while holding down the [FUNCTION] button.

Clock display appears on the screen.

Note

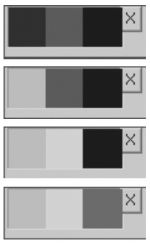
- To turn the clock display off, press the [2/▲] button again while holding down the [FUNCTION] button.
- To move the clock display position, left click and drag the clock display to the desired position.

About Performance Meter

The VR-N900U comes with a performance meter to indicate VR-N900U operating load.
At high operating loads, the system may not be able to record at the preset frame rate or operate normally.

1 Press the [1/▶] button while holding down the [FUNCTION] button.

A performance meter is displayed on the screen.



Load factor less than 5% Indicated in gray
Load factor less than 60% Indicated in Green
Load factor less than 90% Indicated in Yellow
Load factor more than 90% Indicated in Red

Note

- The performance meter automatically displays when the VR-N900U powers up.
- To turn the performance meter off, press the [1/▶] button again while holding down the [FUNCTION] button.
- To move the display position of the performance meter, left click and drag it to the desired position.

CAUTION

- Do not use the recorder when the performance meter is indicated in red.

Changing monitor resolution

Press the [ZOOM OUT/CANCEL] or the [ZOOM IN/ENTER] button while holding down the [FUNCTION] button to change VGA output resolution.

CAUTION

- Selecting a resolution not supported by the monitor may prevent normal monitor synchronization.

Setting/Canceling Operation Lock

The VR-N900U is equipped with an operation lock feature is to prevent the system from being placed into OPERATE OFF accidentally and prevent unauthorized recording operations.

Setting Operation Lock

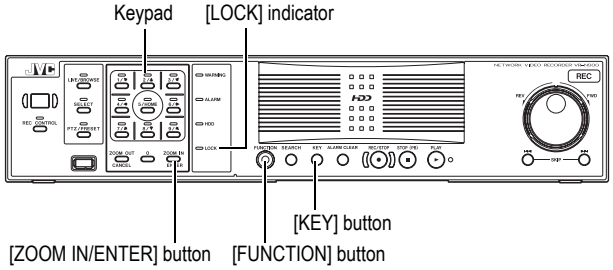
1 Press the [KEY] button while holding down the [FUNCTION] button.

Operation will be locked. The [LOCK] indicator lights up when in operation lock mode.

Canceling Operation Lock

1 (When in operation lock mode) Press the [KEY] button while holding down the [FUNCTION] button.

Operation lock will be canceled. The [LOCK] indicator will turn off.



Switching the Power On/Off

Switching the Power On

1 Connect the power cable.

Connect using the power cable supplied to an AC 120V - 240V 50Hz/60Hz outlet.

2 Turn on the power switch on the rear panel.

- A system check will run when the power is turned on.
- The [OPERATE] indicator will blink.
- After blinking, the [OPERATE] indicator will light up to indicate that operation has been turned on.
- When the settings have been completed, recording operation is started automatically with record control mode.

CAUTION

- Do not disconnect the power cord nor turn the power switch off while the system check is running or in the OPERATE ON mode as this may cause a malfunction.

Switching the Power Off

1 Press and hold the [OPERATE] button for about 2 seconds to turn operation off.

After blinking, the [OPERATE] indicator will go off.

2 Turn off the power switch on the rear panel.

CAUTION

- The recorded images may not play back properly if they were not archived (☞ Page 57) before the power failure.
- It is recommended that an uninterruptible power supply (UPS) be used to protect the hard disk from damage in the event of a power failure. (☞ Page 73)

Switching Operation On/Off by Pressing the Button on the Front Panel

You are able to switch operation on or off.

Switching Operation On

1 (With operation off) Press the [OPERATE] button.

- The [OPERATE] indicator will blink.
- The [OPERATE] indicator will light up, indicating that the system is operable.

Note

- When the power switch on the rear panel is turned on, the system starts up to initiate a system check until the OPERATE ON mode is activated.

Switching Operation Off

1 (With operation on) Press and hold the [OPERATE] button for about 2 seconds.

- The [OPERATE] indicator will blink.
- The screen will go blank and the [OPERATE] indicator will go off, indicating that operation has been turned off.

CAUTION

- Do not turn off the power until operation has been turned off.

Switching Operation On/Off by the Rear Input/Output Terminals

- For details on the rear input and output terminal layout, refer to “Rear I/O Terminals” (Page 9) in the STARTUP GUIDE.

Switching Operation On

1 (With operation off status) Press the [OPE ON/OFF] button.

- The [OPERATE] indicator will blink.
- The [OPERATE] indicator will light up, indicating that the system is operable.

Switching Operation Off

1 (With operation on status) Hold down the [OPE ON/OFF] button for approximately 2 seconds.

- The [OPERATE] indicator will blink.
- The screen will go blank and the [OPERATE] indicator will go off, indicating that operation has been turned off.

CAUTION

- Do not turn off the power until operation has been turned off.

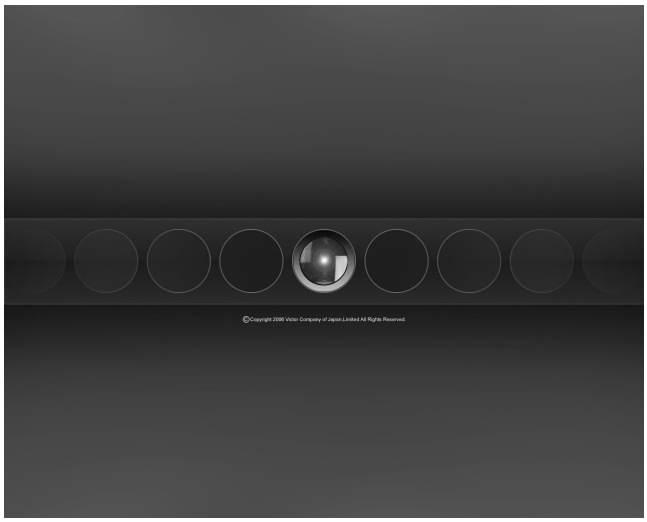
Login

If [Auto Login] is set to [Off], the [Login] window will appear after the system activates. Use the keypad to enter your password and press the [ZOOM IN/ENTER] button.

Note

- You can set [Auto Login] to [On] or [Off] from [Unit Setting] in the Main Menu. (☞ Page 58)

[Login] window



Wallpaper screen

When login has been successfully completed, the wallpaper screen will appear.

- If you select [Live Viewing Auto Start] as the startup window, the [Live Viewing] window is automatically displayed after the login has been successfully completed.

Note

- You can select [Live Viewing Auto Start] from the [Unit Setting] in the Main Menu. (☞ Page 58)

[Live Viewing] window

Opening the Main Menu

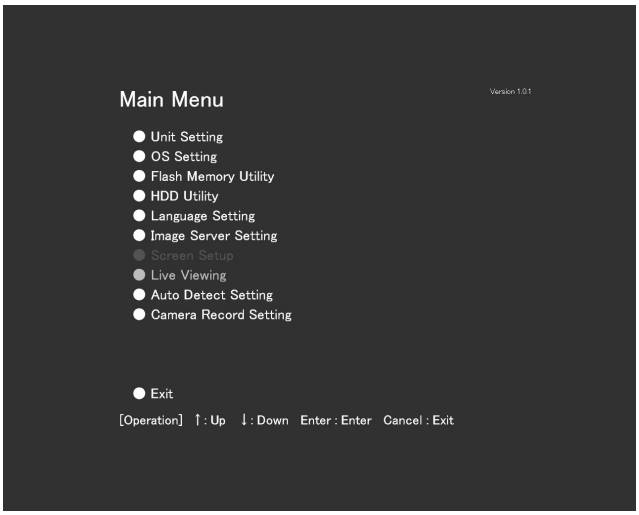
1 Press and hold the [REC/STOP] button for more than 2 seconds.

Recording will stop.

- When in recording control mode, press and hold the [REC CONTROL] button for more than 2 seconds to switch the recording control mode off and stop recording.
- For details of recording mode, refer to “Recording Modes”. (☞ Page 24)

2 Press the [REC CONTROL] button while holding down the [FUNCTION] button.

- The Main Menu will appear. Select a menu with the [2/▲] or [8/▼] button and press the [ZOOM IN/ENTER] button to open the selected main menu.
- Same operation can be done with the [SKIP] button.



Main Menu

Note

- Press the [ZOOM OUT/CANCEL] button to close the Main Menu.

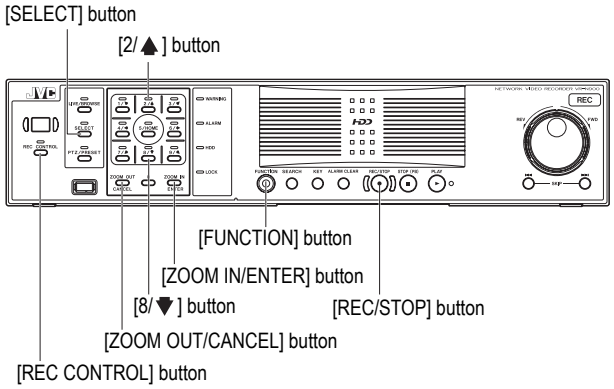
CAUTION

- When using the main menu display operation during the VR-N900 Viewer startup, the VR-N900 Viewer may display in rare cases. In this case, press the [LIVE/BROWSE] button of the front panel and use the display operation of the main menu again.

Main Menu Contents

The Main Menu contains the following menus. Select the required item with the [2/▲] or [8/▼] button and specify the settings. Press the [ZOOM IN/ENTER] button to save the settings and press the [ZOOM OUT/CANCEL] button to close the menu and return to the Main Menu.

- **Unit Setting** (☞ Page 58)
  Lets you specify VR-N900U settings.
- **OS Setting** (☞ Page 59)
  Lets you set the time, IP address and other OS settings.
- **Flash Memory Utility** (☞ Page 60)
  Lets you copy the settings data to the flash memory, etc.
- **HDD Utility** (☞ Page 63)
  Lets you check the status of the hard disk and format the hard disk.
- **Language Setting** (☞ Page 64)
  Lets you specify the language you want to use.
- **Image Server Setting** (☞ Page 64)
  Displays the [Image Server Setting] window.
- **Screen Setup** (☞ Page 30)
  Displays the [Screen Setup] window.
- **Live Viewing** (☞ Page 12)
  Displays the [Live Viewing] window.
- **Auto Detect Setting** (☞ Page 62)
  Lets you specify the IP lease settings and set up the automatic camera detection feature.
- **Camera Record Setting** (☞ Page 38)
  Displays the [Camera Record Setting] window.
- **Exit**
  Exits the Main Menu.



Using the VR-N900 Viewer

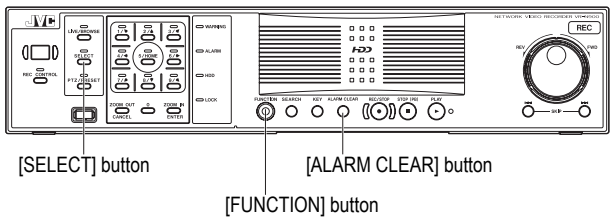
You can view live and recorded images with the VR-N900 Viewer. You can also use the VR-N900 Viewer when monitoring the VR-N900U from a surveillance computer. (☞ Page 71) Some of the VR-N900 Viewer functions differs when remote monitoring from a PC.

Note

- The VR-N900 Viewer logs into the Image Server in the VR-N900U for operation.
- The VR-N900 Viewer logs into the Image Server in the VR-N900U (http://localhost or http://127.0.0.1). By default, [Auto Login] to the VR-N900U is set to [On]. For details on the log in, refer to “Log In to the VR-N900 Viewer”. (☞ Page 71)
- When the maximum number of clients are connected to the surveillance computer, the VR-N900 Viewer cannot log in.

CAUTION

- When you have changed in each setting of the [Camera Record Setting], log out the VR-N900 Viewer (☞ Page 72) first, then log in to the VR-N900 Viewer again.
- You can log in to the VR-N900 Viewer by clicking the [Connect] button in [Connect to Server] window with the default position. If the setting has been changed, please refer to step 2 of the [Log In to the VR-N900 Viewer] instructions (☞ Page 71).
- When the VR-N900 Viewer has become as described below, the following conditions may be recoverable by restarting the VR-N900 Viewer.
  - Live Images and Playback Images are all black.
  - VR-N900 Viewer operation is slow.
  - VR-N900 Viewer does not respond.
- When restarting VR-N900 Viewer, press the [ALARM CLEAR] and [SELECT] buttons while holding down the [FUNCTION] button.



- With the VR-N900 Viewer, the image and sound may not properly synchronize when played back.
- When setting the E-mail (☞ Page 56), test and verify that E-mail is sent.
- When an external hard disk is connected, it may take several minutes for the startup.

Viewing Live Images

Display the [Live Viewing] window

1 Press the [LIVE/BROWSE] button or select [Live Viewing] in the Main Menu.

- The VR-N900 Viewer starts up and the [Live Viewing] window appears.
- If the setup window is displayed, close the setup window.
- If the [Browse] window is displayed, press the [LIVE/BROWSE] button.
- The window switches between the [Live Viewing] window and the [Browse] window each time the [Live Browse] button is pressed.
- You can also click the [Live] tab with the mouse.
- To close the [VR-N900 Viewer] window, click the [Close] button.

[Live Viewing] window

- If you enter settings in the [Camera Record Setting] window without closing the [Live Viewing] window, live images may not appear immediately after the camera settings have been completed. In this case, [Unable to connect to the server! Reconnecting to the server] or [Unable to connect to 127.0.0.1:80 on the device name (camera name)! Reconnecting to the server] appears on the [Live Viewing] window (127.0.0.1:80 is an internal IP address of the VR-N900U).

Note

- Depending on the condition of the network circuit, it may take some time until images from the camera are displayed.
- Depending on the connection of the additional hard disk, several minutes may be required for the [Live Viewing] window to display.

Selecting a View

For details of creating views, refer to “Screen Setup”. (☞ Page 30)

1 Press the [PTZ/PRESET] button until the [PTZ/PRESET] indicator blinks.

The [PTZ/PRESET] indicator switches between lit and blinking each time the [PTZ/PRESET] button is pressed.

2 Press the [ZOOM IN/ENTER] or [ZOOM OUT/CANCEL] button to select a view.

Note

If you connect a mouse, you are able to select a view in two ways:

- By selecting the required view in the [Views] section.
- By selecting the required view from the [Views] list located in the upper part of the window.

CAUTION

- Make sure not to set the changeover of the view with short intervals.
- When live image is not displayed with VN-C625/VN-C655, reset the password of the camera and VR-N900U. As for setting method, refer to the Instruction Manual that came with the camera and setting method of the root password of the [Edit Device Setting] window of this book (☞ Page 41).
- When returning from a [Setup] window to [Live], the audio settings becomes [None]. Please set the audio again.

Selecting a Camera

1 Press the [SELECT] button to set the keypad to selection mode.

The [SELECT] indicator will light up.

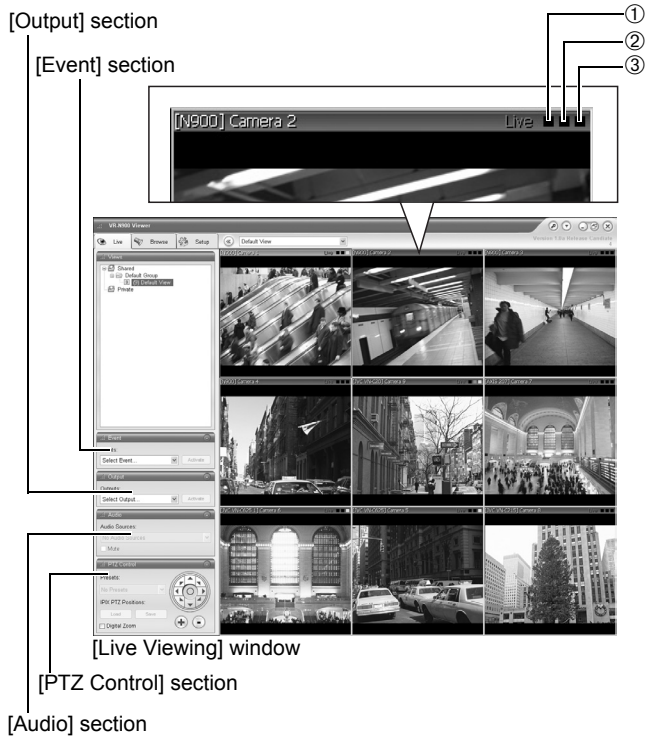
2 Enter the camera number with the keypad.

- If you press the same camera number twice, images from the camera will be enlarged.
- To return to normal view, press the same camera number once more.
- If you press a different camera number while images are enlarged in the view, live images from the selected camera will be enlarged. The multiple screen display may briefly appear when camera selection is changed in enlarged view.
- You can also click the bar at the top of the live image of a particular camera with the mouse to select the image.

- You can change the camera number in the [Record Camera Setting] window. (☞Page 38) If you press 0 first and then enter the camera number, you can specify numbers from 10 to 19. Use the mouse to specify numbers from 20 upwards.

Note

- When you select a particular camera, the blue bar at the top of each live image becomes a lighter blue.
  Each bar features three-color square indicators with the following functions.
  ① Event indicator (left indicator: solid yellow)
  Lights up when events specified in the [Camera Record Setting] occur. (☞Page 52) Click the image bar to reset the event indicator. The indicator appears black if event indication has not been specified for the camera in question, or if no specified events have occurred.
  ② Motion indicator (indicator in the middle, solid red)
  Lights up when motion is detected. (☞Page 54) Click the image bar to reset the event indicator.
  ③ Online indicator (right indicator, blinking green)
  Blinks every time an image is received from the camera.
- The image bar displays the name of the camera as well as the name of the device to which the camera is connected.
- Each image bar will display the word [Live] when live images are displayed, and the word [Stopped] if the camera is stopped and live viewing is not possible.
- To enlarge images from a particular camera in a view using a mouse, double-click the image bar. To return to normal view, simply double-click the image bar again.
- The event or motion indicator can also be canceled by pressing the [ALARM CLEAR)] button.



Using the PTZ Feature

PTZ stands for pan, tilt and zoom. If the camera is a PTZ camera, you can use the keypad and the [ZOOM IN/ ENTER] button and [ZOOM OUT/CANCEL] button to move the camera up, down (tilt), right and left (pan) and enlarge the image (zoom).

Pan/Tilt

1 Press the [PTZ/PRESET] button until the [PTZ/ PRESET] indicator lights up.

The [PTZ/PRESET] indicator switches between lit and blinking each time the [PTZ/PRESET] button is pressed.

2 Press the arrow buttons on the keypad to move the camera in the selected direction.

- Pressing the [HOME] (default) button on the keypad moves the camera to its home position.

Zoom In/Zoom Out

1 Press the [PTZ/PRESET] button until the [PTZ/ PRESET] indicator lights up.

The [PTZ/PRESET] indicator switches between lit and blinking each time the [PTZ/PRESET] button is pressed.

2 Press the [ZOOM IN/ENTER] button or the [ZOOM OUT/CANCEL] button.

CAUTION

- The PTZ features are only available if the camera is a PTZ camera. If the camera is not a PTZ camera, pressing the button will have no effect.

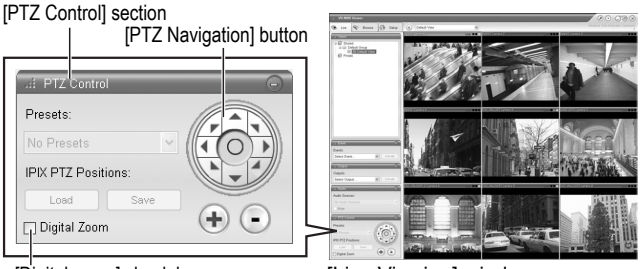
Note

- Many PTZ cameras may be controlled by pointing and clicking inside the images from the camera. If you see a set of crosshairs when placing your mouse pointer over the images from a PTZ camera, point-and-click control is supported for the camera.
- The camera cannot be operated in the [Image] window when the mouse pointer does not change to the cross shape pointer.
- The mouse pointer may not change to the cross-shape pointer depending on the type of the PTZ camera.
- The PTZ camera may not operate even though mouse pointer changed to the cross-shape pointer depending on the PTZ camera. In this case, use the PTZ navigation button of the [PTZ control] section to operate the PTZ camera.
- For PTZ cameras, if your mouse is equipped with a scroll wheel, you are able to zoom in and out using the scroll wheel on your mouse.

- You are able to use the PTZ Navigation buttons in the [PTZ Control] section to move the selected PTZ camera. The round middle button lets you quickly move the camera to its home position. The [+] and [-] buttons lets you zoom in and out respectively.

Digital Zoom

By selecting the [PTZ Control]'s [Digital Zoom] check box, you are able to use digital zoom on images from any camera displayed in the view. When digital zoom is enabled, you will see a small overview frame in the bottom right corner of each of the view's camera positions.



Note

- The recorded image(s) will not be recorded in zoom even when the digital zoom is used.
- When the digital zoom is used, the recording frame rate may decrease because the load factor of VR-N900U becomes high.
- To exit the digital zoom, unselect the [Digital Zoom] check box or click the [-] button until the image returns to normal size.

Using Preset Positions

This feature lets you move the camera to preset positions by entering the preset number with the keypad. (☞ Page 44 "Defining a Preset Position")

1 Press the [PTZ/PRESET] button until the [PTZ/PRESET] indicator blinks.

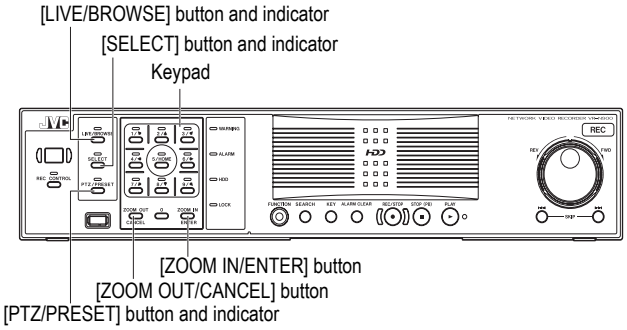
The [PTZ/PRESET] indicator switches between lit and blinking each time the [PTZ/PRESET] button is pressed.

2 Move the camera to a preset position by entering the preset number with the keypad.

- If you press 0 first and then enter the preset number, you can specify numbers from 10 to 19.
- To specify numbers from 20 upwards, select the preset number from the [Presets] list in the [PTZ Control] section with the mouse.

CAUTION

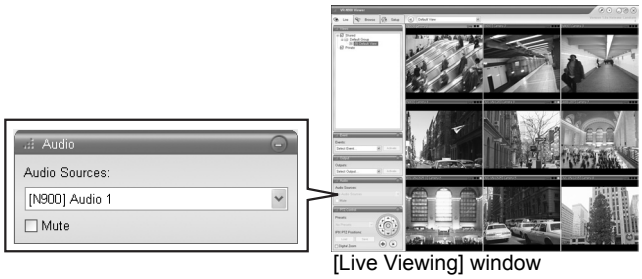
- The buttons are only available if the camera is a PTZ camera.



Other Useful Functions

●Audio

To listen to live audio, select the required audio source in the [Audio] section's [Audio Sources] list.
To temporarily mute the live audio, select the [Mute] check box.



CAUTION

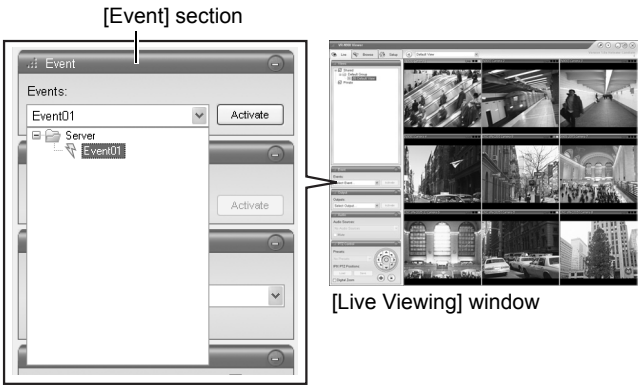
- When the audio source is selected on multiple surveillance computers, sound quality may deteriorate.
- When returning from a [Setup] window to [Live], the audio settings becomes [None]. Please set the audio settings again.

Note

- When you select a camera which had the audio source set by the [Camera Setting] of [Camera Record Setting] window, the specified audio is output. (☞ Page 28)
- Selecting a camera not set to record an audio will output the most recently selected audio source continuously.
- When you select a camera that has not set an audio source, the most recently played audio will output continuously.
- When the recording and live image is simultaneously displayed, the displayed video and audio may not properly synchronize. (There is no effect to the recording in the system or the additional hard disk.)

●How to Manually Trigger an Event

To manually trigger an event, select the required event in the [Event] section, and click the [Activate] button.



Note

- For details of events, refer to “Camera Input/Output Port and Events”. (☞ Page 47)
- Events must be defined in advance. (☞ Page 47)

●Outputs

To trigger an output, select the required output in the [Output] section, and click the [Activate] button.

Note

- Output must be defined first. (☞ “Specify an output” on Page 49)

●Camera Shortcut Menus

By right-clicking inside one of the images from the camera, you get access to a shortcut menu.

Some of the shortcut menu’s content may vary from camera to camera, depending on the configuration of the selected camera.

Camera:

Lets you select another camera image for display in the view position.

Sound Notifications:

Lets you temporarily mute sound notifications.

PTZ Presets:

Lets you select between the camera’s preset positions.

Matrix:

Select this option to use the Milestone XProtect Matrix feature. For details, refer to the Milestone XProtect Matrix manual provided by Milestone Systems.

Send Camera:

Lets you send images from the selected camera to another single-camera position in an open view.

Playing Back Recorded Images

CAUTION

- The recording frame rate may decline when using the [Live Viewing] window.
- For the area(s) that do not support the Daylight Saving Time (DST). If DST is entered, the sections where a change to DST is made may not be properly played back or searched.
- When the recording and recorded image is simultaneously played back, and access to the hard disk occurs frequently, the image which is played back may pause and the audio may break up. (There is no effect to the recording in the system or the additional hard disk.)
- When returning from the [Setup] window to the [Browse] window, the audio settings becomes [NONE]. Please select the audio source again.

●Display the [Browse] window

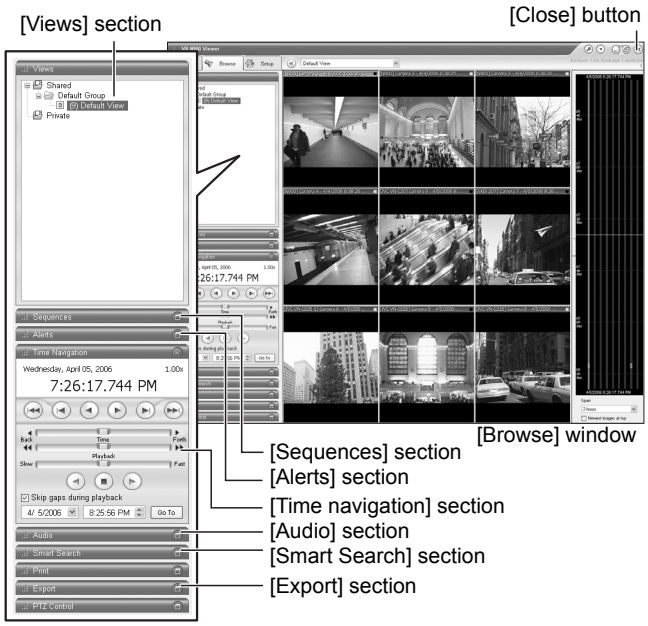
1 Press the [LIVE/BROWSE] button or select [Live Viewing] from the Main Menu.

The VR-N900 Viewer starts up and the [Live Viewing] window appears.

2 When the [Live Viewing] window appears, press the [LIVE/BROWSE] button again.

The window switches between the [Live Viewing] window and the [Browse] window each time the button is pressed.

[Live Viewing] window



- It may take a few minutes until the [Browse] window is displayed.
- If you enter settings in the [Camera Record Setting] window without closing the [Browse] window, recorded images may not be displayed immediately after the camera settings have been completed. In this case, [Unable to connect to the server! Reconnecting to the server] or [Unable to connect to 127.0.0.1:80 on the device name (camera name)! Reconnecting to the server] appears on the [Browse] window (127.0.0.1:80 is an IP address of the VR-N900U).
- If you play back a recorded image that is not recorded at all, [Connection: [N900] Camera1 on 127.0.0.1:80] will display continuously in the [Browse] window.
- To close the VR-N900 Viewer, click the [Close] button.

Note

- You can also click the [Browse] tab with the mouse.
- Each image bar features an online indicator, which is useful when browsing the recordings. The indicator lights up green each time a new image is displayed.
- Recorded images are saved as a database. Recorded image data is called the database in this device.
- When [Before Database Start] appears on the [Browse] window, no database (recorded image) exists in prior to the current image viewed.
- When [After Database End] appears on the [Browse] window, no database (recorded image) exists after the current image viewed.
- Make sure not to set the changeover of the Live and Browse at short intervals.

CAUTION

- If several sections are opened in the left side of the [Live Viewing] window, it may not be possible to display them all in the window. If this happens, double-click the section bars and close the sections.

Selecting a View

1 Press the [PTZ/PRESET] button until the [PTZ/PRESET] indicator blinks.

2 Press the [ZOOM IN/ENTER] or [ZOOM OUT/CANCEL] button to select a view.

Note

If you connect a mouse, you are able to select a view in two ways:

- By selecting the required view in the [Views] section.
- By selecting the required view from the [Views] list located in the upper part of the window.

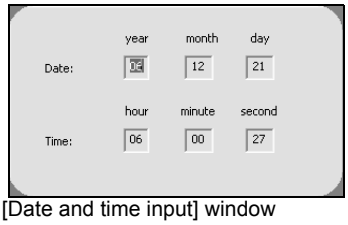
Searching for a Recorded Image

You can search for and play back images by specifying a date and time.

●Using the [SEARCH] button on the front panel

1 Click the [SEARCH] button in the [Browse] window.

The date and time input window will appear.



[Date and time input] window

2 Use the keypad to enter the search date and time.

Select the entry field with the [SKIP] button (⏭ or ⏮) and input the date and time.

3 Press the [ZOOM IN/ENTER] button.

The view in the image display window on the right will jump to the selected date and time.

●Using the mouse

Use [Time Navigation] section in the [Browse] window.

1 Double-click the [Time Navigation] bar in the [Browse] window.

2 Enter the search date and time in the boxes on the left of the [Go To] button at the bottom of the window.

Specify the date in the left-hand box and the time in the right-hand box.

3 Click the [Go To] button.

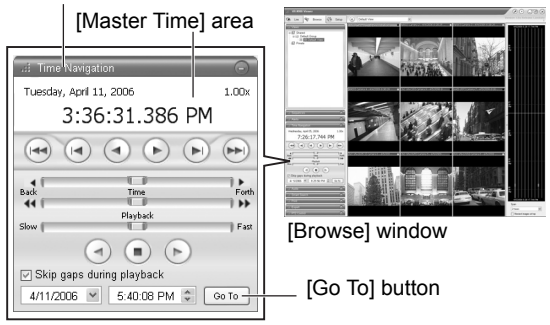
The view in the image display window on the right will jump to the specified date and time.

The specified date and time will appear in the [Master Time] area.

Note

- The [Master Time] area displays the recording date and time of the selected playback images. The master time is the time to which all the cameras are linked, and when you specify a time, all the images you see in the [View] will be from exactly the same point in time.
- Some cameras may only record if motion is detected. Also, there may be no recorded images from one or more cameras in the view matching the specified point in time. When this is the case, the last image in the camera's database prior to the specified point in time will be displayed in the view. (Recorded images are saved to the database.)
- The [Master Time] area also displays the current selected playback speed.

[Time Navigation] bar



[Time Navigation] section

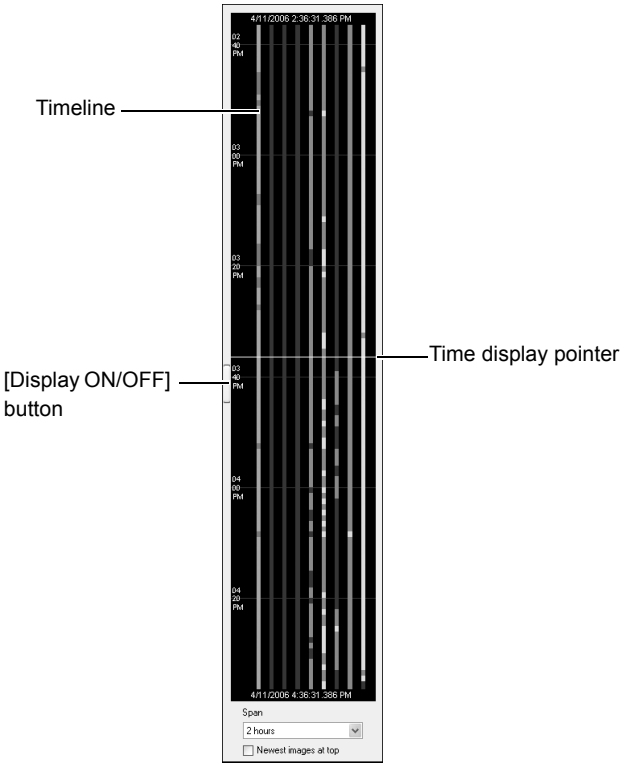
CAUTION

- The [Master Time] area may display an exceeded record date and time of the latest recorded image. In this case, click the ⏭ button and move to the latest recorded image, and then click the ▶ button.
- When [Skip gaps during playback] is selected in the [Time Navigation] section, playback may stop when it exceeds the end of the recording while recording and playback simultaneously. In this case, deselect the [Skip gaps during playback] checkbox. If the playback stops, please click the play button again.

●Using the [Timeline Browser]

You can browse through recorded images using the [Timeline Browser] on the right of the [Browse] window. The vertically extended timeline shows the recording status and reflects only the number of cameras displayed in the VR-N900 Viewer. Drag on the timeline up or down with the mouse while checking the time display pointer.

- The timeline is only a rough guide and may differ from actual time.



[Timeline browser]

●Timeline Colors and Lines

The timeline of the camera selected in the view is highlighted in a lighter color.

- ■ Red: Recordings with motion (Pink when highlighted)
- ■ Green: Recordings without motion (Light green when highlighted)
- ■ Black: Periods without recordings (Gray when highlighted)
- ■ White horizontal line (Time display pointer): Indicates the time recorded for the image being displayed

Note

- Immediately below the timeline browser itself, you are able to specify which time span (1 hour, 2 hours, etc. up to 1 day) should be used in the timeline, and these settings are not saved and will be lost when the VR-N900 Viewer is restarted.
- If your mouse has a scroll wheel, you can also use the scroll wheel for browsing the timelines.
- Double-click at any point within a timeline to quickly move to the desired point in time.
- When you do not need the timeline browser, you can hide it by clicking the [Display ON/OFF] button in the left side of the timeline browser's border.

CAUTION

- If you drag on the timeline suddenly up or down with the mouse, a portion of the timeline may not update. In this case, reboot the VR-N900 Viewer (☞ Page 11).

Playing Back, Skipping and Stopping Recorded Images

●Using the [PLAY], [SKIP] and [STOP(PB)] buttons on the front panel

Playing Back

1 Press the [PLAY] button.

- Playback will start from the date and time displayed in the [Master Time] area of the [Time Navigation] window.
- Images will be played back according to the angle of the shuttle dial. (x1/20, x1/5, x1, x2, x5, x10, x20)

Skipping

1 Press the [SKIP] button.

The [SKIP] buttons have the following functions.

- ⏮: Moves to the first image in the previous sequence. When pressed and held down, moves to the first image in the database for the selected camera.
- ⏭: Moves to the first image in the next sequence. When pressed and held down, moves to the latest image in the database for the selected camera.

Note

- Sequences refers to sequences of images recorded when an event or motion is detected.
- The recorded images are saved as a database.

CAUTION

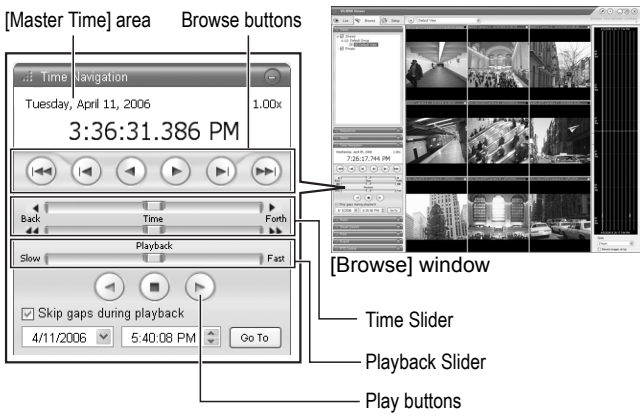
- The [SKIP] button will not work when no camera is selected.
- In simultaneous recording and playback, an [After Database End] message may appear as playback catches up with recording during playback near the current time.
- When motion/event is set to record (☞ Page 28), VR-N900U will not record if the motion/event does not occur. But when you playback near the current time, the image which is not recorded will also playback.

Stopping

1 Press the [STOP(PB)] button.

Playback will stop.

●Playing back, stopping and skipping using the mouse



The buttons and sliders have the following functions.

Browse Buttons

: Moves to the previous image of the selected camera (frame-by-frame playback in reverse mode).

: Moves to the next image of the selected camera (frame-by-frame playback in forward mode).

: Moves to the first image in the previous sequence of the selected camera (This function does not work properly if there are no sequences or with some sequence lengths.).

: Moves to the first image in the next sequence of the selected camera (This function does not work properly if there are no sequences or with some sequence lengths.).

: Moves to the image recorded on the most previous date in the database for the selected camera (This function may not work properly at 10x or higher playback speeds.).

: Moves to the image recorded on the most recent date in the database for the selected camera (This function may not work properly at 10x or higher playback speeds.).

CAUTION

- The browse buttons are only enabled when a camera has been selected.
- Time may be required for the images to be moved after clicking the “previous sequence/next sequence” button. Please note that if the buttons are clicked continuously before the images are moved, the images will be moved in the selected sequence collectively.

Time Slider

Moving the slider to the left changes the recording date to an older date and moving the slider to the right changes it to a more recent date. Use the top bar for fine browsing (x0.4 to x240) within a limited period of time and use the bottom bar for easy browsing (x20 to x36,000) for longer time spans.

Playback Slider

The middle position is for playback at normal speed (1.00x). Move the slider to the left to reduce the playback speed and move it to the right to increase the playback speed. Dragging the slider to its leftmost position pauses playback. The playback speed is displayed at the top right of the [Master Time] area.

Play Buttons

: Plays back images in reverse.

: Plays back images.

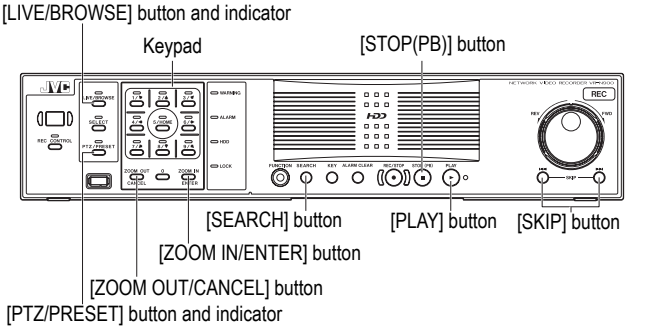
: Stops playback.

CAUTION

- The [Play] buttons do not work while the Playback Slider is placed in its leftmost position (pause). Select the desired speed by moving the Playback Slider.
- The angle of the shuttle dial does not affect playback, which is operated in the [Time Navigation] section using a mouse.

Note

- If the [Skip gaps during playback] check box in the [Time Navigation] window is selected, sections where there are no recorded images from the selected camera will be skipped.
- When the recorded images are played back with some images skipped, [SKIP] is displayed in red in the [Master Time] area for a limited time.
- During playback, skip operations may differ between a single screen and multiple screens. Even if the selected camera has not made a recording, skipping will not take place as long as another camera has made a recording. The last recorded image appears in place of any section that is not recorded.

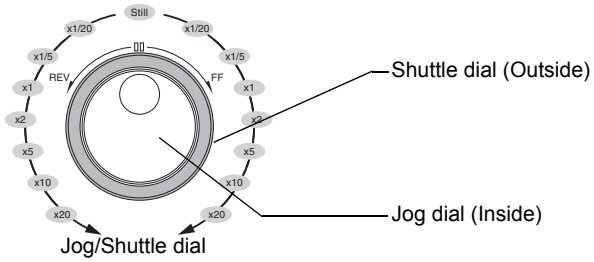


Adjusting the Playback Speed (Jog/ Shuttle Playback)

You can adjust the playback speed by turning the jog dial/ shuttle dial on the front panel.

Shuttle Playback

- Rotate the shuttle dial during playback or when playback is paused to start fast forward, fast reverse or slow playback.



■ The playback speed indications when performing fast forward or fast reverse playback by rotating the shuttle dial are approximate. The speed may differ depending on the conditions, such as the playback mode (multi-view, single view) and the recording mode (motion detection, recorded frame rate).

Jog Playback

- Rotate the jog dial to play back frame-by-frame.
- Rotate the dial clockwise to play back a single frame in the forward direction, and rotate the dial counterclockwise to play back a single frame in the reverse direction.
- Release the dial to pause the playback. However, when frames are played back successively in the forward or reverse direction, playback may continue momentarily after the jog dial is released.

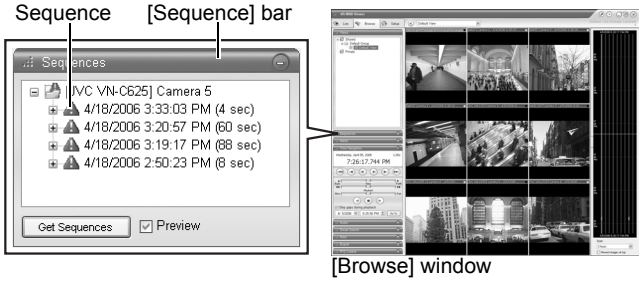
CAUTION

- The jog dial will not work when no camera is selected.
- When the playback speed is modified or playing back at high speed while recording, the frame rate of the recording may decrease. Observe the performance meter while adjusting the playback speed.

Using Sequences

Sequences refers to sequences of images recorded when an event or motion is detected. You can refer to the list of recorded images for each sequence.

1 Double-click the [Sequences] bar in the [Browse] window.



2 Click the [Get Sequences] button.

- A list of 20 sequences prior to and following the point in time displayed in the view will appear.
- If the [Preview] check box is selected, you are able to quickly view each sequence by placing the mouse pointer over the required sequence in the list.

3 Click a sequence in the list.

All images in the view move to the time of the sequence.

Note

- Clicking the expand icon (+) next to a sequence in the list will show you the exact date and time of the first and last image in the sequence as well as the exact date and time of the motion detection, event, etc. triggering the recording.

CAUTION

- There are times when the continuous multiple sequences change into one sequence depending on [Pre/post recordings on motion/event] setting. (☞ Page 29)

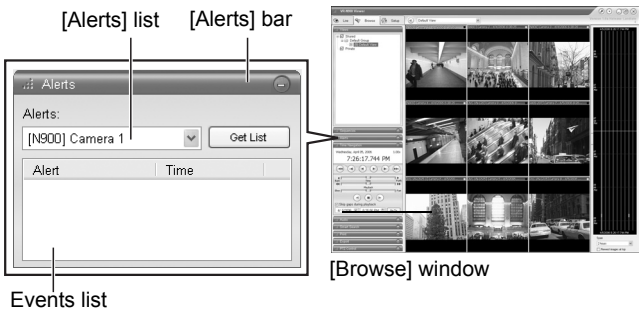
Displaying the Alerts List

The [Alerts] section lets you view a list of recorded images for each alert, such as when motion is detected. (☞ Page 54)

1 Double-click the [Alerts] bar in the [Browse] window.

2 Click the [⌄] of the Alerts list and select the required event or events in the Alerts list.

You may select either a single event or all events on a camera/particular server.



3 Click the [Get List] button.

This will display a list of detected events.

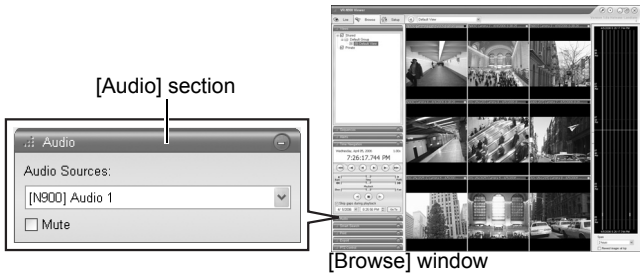
You are able to click the listed events to view recordings from the required event in the view.

Note

- The Alerts list displays events occurring in the time period (approx. 1 day before and after) set in [Time navigation].

Audio

To listen to recorded audio, select the required audio source in the [Audio] section's [Audio Sources] list.
To temporarily mute the recorded audio, select the [Mute] check box.



CAUTION

- The sound may become distorted when audio is played back with multiple surveillance computers.
- When returning from the [Setup] window to the [Live] window or [Browse] window, the audio settings becomes [NONE]. To listen to an audio, reselect an audio from the [Audio Sources] list.
- The audio will not be outputted at the time of still image playback and search/frame advance playback other than feed-forward x1.
- When a recorded image is played back while recording, the played back audio may break up. (Recording)

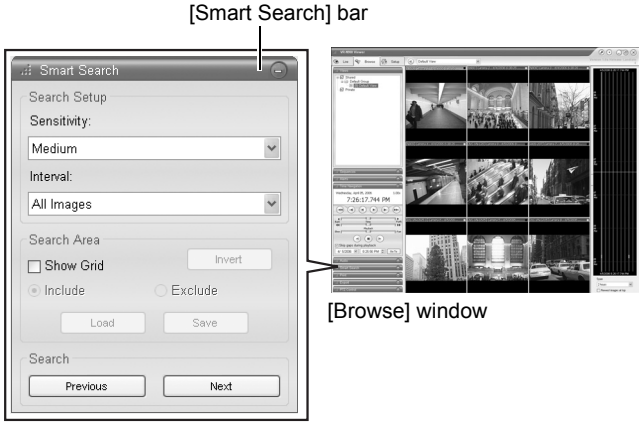
Note

- When you select an IP camera that has been set to record an audio, the specified audio will output.
- Selecting a camera not set to record an audio will output the most recently played back audio continuously.
- When the recording and recorded image is simultaneously played back, the image which is played back may pause and the sound may break up. (There is no effect to the recording in the system or the additional hard disk.)

Smart Search

Smart Search lets you specify motion in one or more selected areas of images from a particular camera. (☞ Page 54)

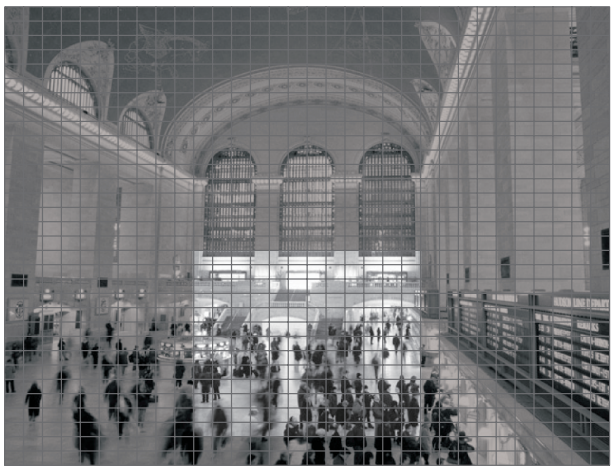
1 **Double-click the [Smart Search] bar in the [Browse] window.**



2 **Select [Show Grid] check box in the [Search Area].**

3 **Select the required camera.**

A blue grid overlay will appear on the image.



4 **Click and drag inside the image to select the area in which you want to perform the Smart Search.**

- The areas you select will become visible through the blue overlay.
- With the [Include] and [Exclude] options, you are able to toggle between including/excluding areas when you drag. With the [Invert] button, you are able to quickly invert your selection.

5 **In the [Search Setup] section, select the required search sensitivity (Very Low - Very High) in the Sensitivity list.**

6 **Select the required image interval in the [Interval] list.**

7 Click the [Next] or [Previous] button to search through data with motion detected in the selected areas.

The Smart Search will begin. When motion is detected inside the selected area(s), it will be highlighted in the view.

CAUTION

- Smart Search is carried out forwards or backwards from the time of the image you are viewing.
- A Smart Search performed during recording may lower the recording frame rate. Observe the performance meter and use the recorder in the range that does not indicate in red.

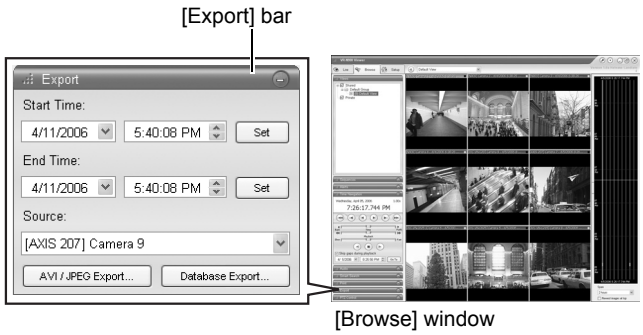
8 Click the [Next] or [Previous] button to continue the smart search.

Note

- You can use the [Save] button to temporarily save the area you selected in step **4**.
  To return to the saved area settings, click the [Load] button after you have finished selecting the required areas.
- To cancel selection of an area, select the [Exclude] check box, click and drag all the areas.

Exporting Images and Audio

1 Double-click the [Export] bar in the [Browse] window.



2 Enter the export period start date and time.

Clicking the [Set] button sets the date and time of the [Master Time] Area.

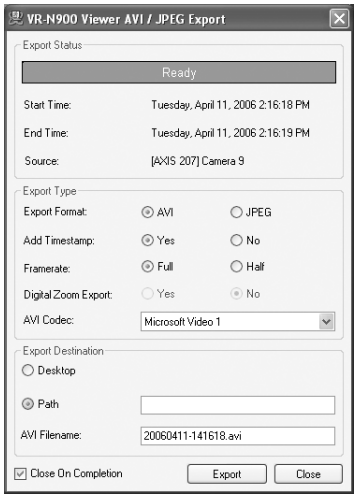
3 Enter the end date and time.

Clicking the [Set] button sets the date and time of the [Master Time] Area.

4 Select the required camera from the Source list and click the [AVI/JPEG Export] button or [Database Export] button.

- If you selected a source, you may select [Current View Source], in which case the export will include images from all cameras in the current view.
- This will open the export dialog. The export dialog will list the specified start time, end time and camera.
- Export preparation may take some time depending on how the external hard disk drive is connected.

5 If you selected [AVI/JPEG Export], select the required export format.



- Select [AVI] (movie clip) or [JPEG] (still images).
- Select whether to add time stamps to the exported images.

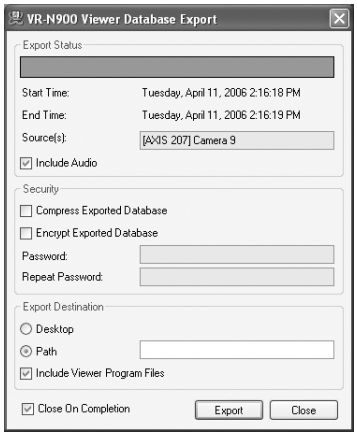
6 If you selected [AVI] format, select the required frame rate.

With the [Full] option, all images will be sent to the AVI file; with the [Half] option, only every second image will be sent, to reduce the size of the AVI file, though images will still play back in real-time.

7 If you selected [AVI] format, select the required [AVI Codec] in the [AVI Codec list] and enter the file name.

By default, the file name will have the structure [yyyymmdd-hhmmss.avi].

8 If you selected database format, the following items can be specified.



Include Audio:

Select this check box to include audio in the export (if no audio sources are attached, the check box will not be available).

Compress Exported Database:

Select this check box to compress the exported database.

Encrypt Exported Database:

Select this check box to encrypt the exported database. Specify a password for subsequent decryption.

9 Insert a USB memory device.

Insert the USB memory device you want to export the data to.

10 Specify the export destination.

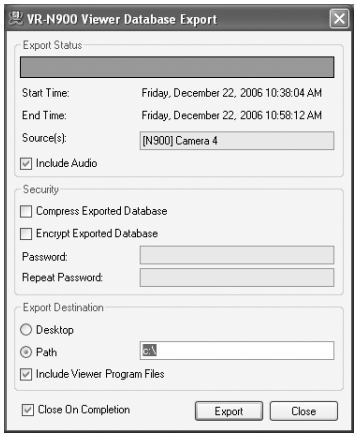
Desktop:

- Never select this with the VR-N900U.
- Select this when exporting with a surveillance computer onto the desktop.

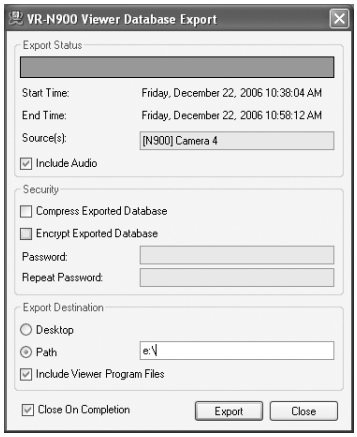
Path:

Select this with the VR-N900U.

Do not manually enter the path on the VR-N900U.



Select [Path] and select [C:\] to highlight, and then press the [9] button of the keypad while holding down the [FUNCTION] button on the front panel to automatically enter the path of the USB memory.



11 If you selected database format, you are able to include a stand-alone version of the Viewer (application for viewing and navigating recordings) in the database export by selecting the [Include Viewer Program Files] check box.

- To view the exported data on a PC, double-click the [Browser.exe] file in the [Exported Images] folder of the USB memory used for the [Export]. It will open the Viewer and you can view the exported data.

12 Click the [Export] button.

Export will begin.

Note

- For details on the Viewer, refer to the XProtect™ Enterprise 6.0 Monitor & Viewer User's Manual provided by Milestone Systems (http://milestonesys.com/?cid=265).
- To include audio within the export file with the AVI export option, open the recorded image that has been exported in the DB format on the Viewer and re-export it with the AVI format on the Viewer again.

CAUTION

- When exporting with the database format, you are able to include audio within the export file; with the AVI/JPEG export option, you are not.
- The recording frame rate may decline during export.
- This recorder does not support Daylight Saving Time (DST). If DST is set, the sections where a change to DST is made may not be properly exported.

Printing the Recorded Images

You may print the playback image that is displayed.

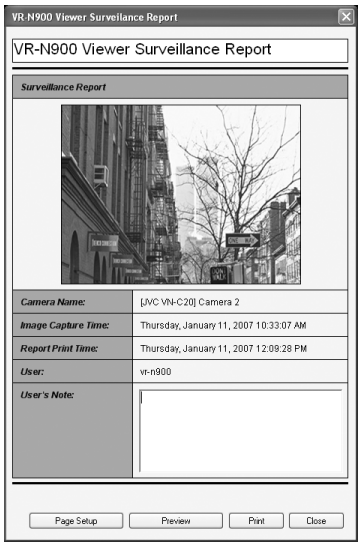
CAUTION

- This function is not available with the VR-N900U.
- This function is for the downloaded VR-N900 Viewer.

1 Double click the [Print] bar in the [Browse] window.

[Browse] window

2 Click the [Print…] button in the [Print] section. [VR-N900 Viewer Surveillance Report] window is displayed.



3 Click the [Page Setup] button in the [VR-N900U Surveillance Report] window to set the printer.

4 Click the [Print] button to start printing.

When the printing ends, click the [Close] button to close the print window.
Comments entered in [User's Note:] are printed.

Recording Camera Images

Recording Modes

●Recording Control Mode

In this mode, recording is carried out in accordance with the [Camera Record Setting].
The [REC CONTROL] indicator is lit.
You are able to switch the recording control mode on or off by pressing and holding the [REC CONTROL] button.

- Set online/offline periods for each camera with the [Scheduler] settings. (☞ Page 26)
- Specify the frame rate and conditions for starting recording in [Camera Settings]. (☞ Page 28)

CAUTION

- The camera will not record during the offline periods specified in the [Scheduler] settings, regardless of the [Camera Settings].
- The [REC CONTROL] button is disabled when the Main Menu is displayed, when settings are being specified and during recording.
- When there is an unconnected camera, time may be required for the [REC CONTROL] indicator lamp to light up.

Note

- Press the [REC/STOP] button to cancel recording control mode and enable manual recording mode.
- Press and hold down the [REC/STOP] button to cancel all recording modes and stop recording.
- Set [Operate] to ON to automatically enter the recording control mode.

●Manual Recording Mode

Manual recording is a recording mode that executes recording from all cameras regardless of the settings in the [Camera Record Setting]. It will be recorded at the frame rate that was set in [Image Storage settings] - [Desired framerate settings] of the [Camera Settings] window.
Manual recording lets you start and stop recording from all cameras by pressing the [REC/STOP] button. Press the [REC/STOP] button to start recording and press and hold it down to end recording. Holding down the [REC/STOP] button when recording is not on will not start recording.
The [REC CONTROL] indicator is off.

●Recording by EXT REC IN Signal Mode

Recording will start from all cameras when the [EXT REC IN] terminal on the rear panel is set to MAKE state. It will be recorded at the frame rate that was set in [Image Storage settings] - [Desired framerate settings] of the [Camera Settings] window.

Recording by EXT REC IN signal has priority over recording control mode or manual recording.
When recording by EXT REC IN signal is finished, the cameras will return to the original recording mode.

Note

- The [REC CONTROL] indicator goes off and the [REC] indicator blinks during recording by EXT REC IN signal.
- Recording will start or stop from all cameras, regardless of the [Scheduler] settings or [Camera Settings].
- Press the [REC/STOP] button to cancel recording by EXT REC IN signal and enable manual recording mode. The [REC] indicator that has been blinking lights up.
- Press and hold down the [REC/STOP] button to cancel recording by EXT REC IN signal and stop recording.

●Emergency Recording Mode

Recording will start from all cameras when a MAKE signal is detected by the [EMERGENCY] terminal on the rear panel. It will be recorded at the frame rate that was set in [Image Storage settings] - [Desired framerate settings] of the [Camera Settings] window.
Recording will continue for the length of time specified in [Emergency Record] in [Unit Setting]. (☞ Page 58)
Emergency recording has priority over recording control mode or manual recording mode.
When emergency recording is finished, the cameras will return to the original recording mode.

Note

- The [REC CONTROL] indicator goes off and the [REC] indicator blinks during emergency recording.
- Recording will start and stop from all cameras, regardless of the [Scheduler] settings or [Camera Settings].
- Press the [REC/STOP] button to cancel emergency recording and enable manual recording. The [REC] indicator that has been blinking lights up.
- Press and hold down the [REC/STOP] button to cancel all recording modes and stop recording.

CAUTION

- During the manual recording, recording by EXT REC IN signal or emergency recording, motion detection and event recording settings are ignored.

Operations in Case of Power Failure

If a power failure occurs during recording, the system will perform recovery recording in the mode selected before the power failure.

- In the [REC CONTROL] mode, recording by a motion or event will not resume unless another motion or event is generated after the power failure is recovered.
- The recording control mode returns to the status it had prior to the power failure.

CAUTION

- The recorded images may not play back properly if they were not archived (☞ Page 57) before the power failure.
- It is recommended that an uninterruptible power supply (UPS) be used to protect the hard disk from damage in the event of a power failure. (☞ Page 73)
- When a power failure occurs while formatting a hard disk or archiving, even when an UPS is connected, subsequent operations may be interrupted.

Selecting the Record Control Mode

1 Press and hold down the [REC CONTROL] button while recording is stopped ([REC] indicator is off).

The [REC] indicator lights up and the unit will enter the [REC CONTROL] mode. Recording will start in accordance with the settings in the [Camera Record Setting].

- To stop recording, press and hold down the [REC/STOP] button during recording other than [REC CONTROL] mode (the [REC] indicator lights up or blinks). The [REC] indicator turns off. Then, press and hold down the [REC CONTROL] button.

Note

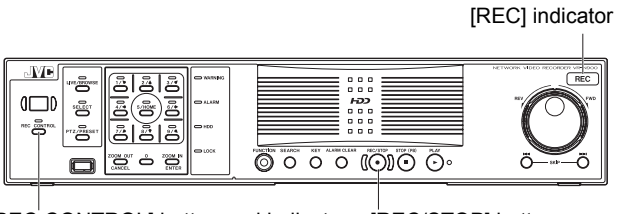
- To exit the [REC CONTROL] mode, press and hold down the [REC CONTROL] button or [REC/STOP] button.
- Depending on camera status and other factors there may be a delay between entering the recording control mode and the start of actual recording.

Selecting the Manual Recording Mode

1 Press the [REC/STOP] button.

The unit enters the manual recording mode and starts recording from all cameras. The [REC] indicator lights up.

- To stop manual recording, press and hold down the [REC/STOP] button. The [REC] indicator goes off.
- To clear all modes, press and hold down the [REC/STOP] button.



Specifying Recording Settings in Recording Control Mode

To specify the recording control mode settings, configure the [Scheduler] settings and [Camera Settings].

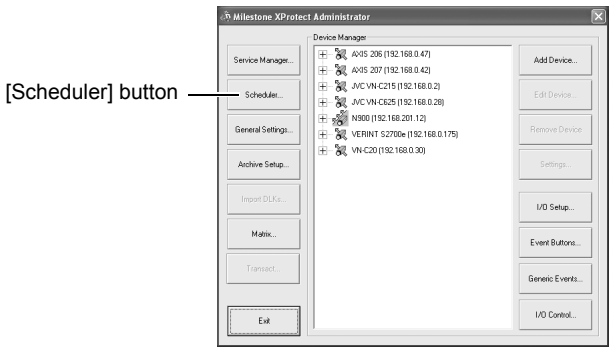
Specifying a Scheduler

- This feature lets you specify when each camera should be online and whether cameras should start and stop transferring images when specific events occur.
- When online, the camera will record according to the settings in the [Camera Record Setting].
- When offline, the camera will not record regardless of the settings in the [Camera Record Setting].
- You can specify periods of time when e-mail alerts will be triggered if motion is detected, and if using PTZ cameras, you can specify periods of time when patrolling will be activated. (☞ Page 45)
- The resolution of the setting is set by 5 minutes.

CAUTION

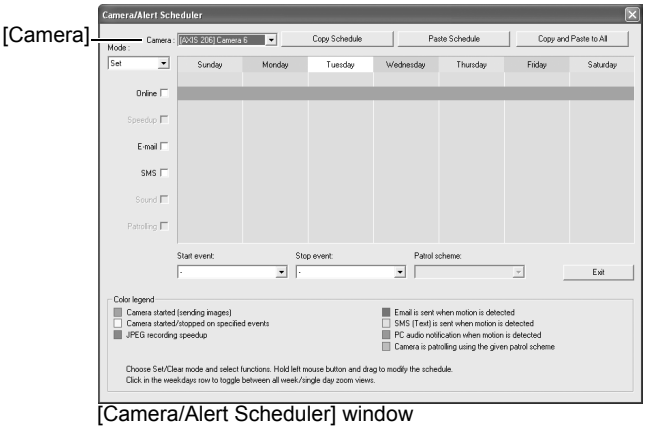
- Manual recording and recording controlled from the rear panel are not affected by the online/offline schedule.
- When it is set at the time of an event or offline with the scheduler, or when the [Start up cameras on remote live request] of [General Settings] (☞ Page 55) is set, the cameras will be online when the live images are displayed with VR-N900 Viewer.

1 Select [Camera Record Setting] from the Main Menu.



2 Click the [Scheduler] button.

The [Camera/Alert Scheduler] window will appear.

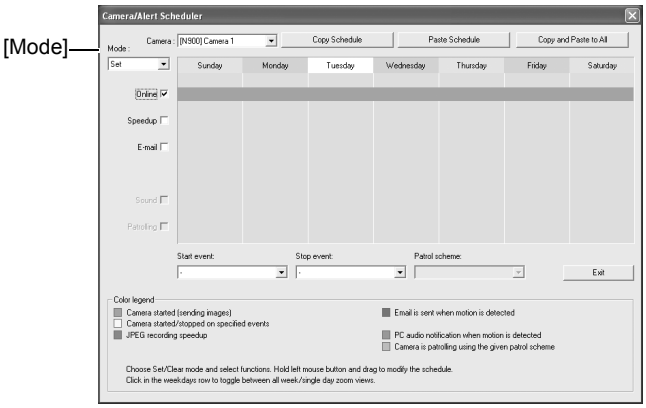


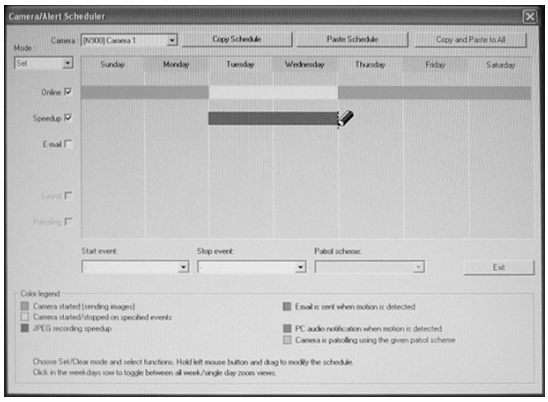
[Camera/Alert Scheduler] window

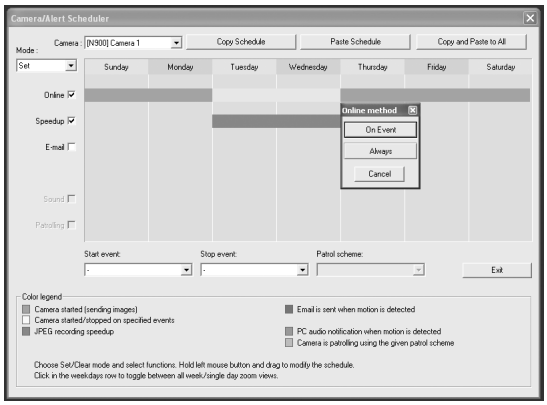
3 Select the camera to which you want to set a schedule from [Camera] at the top left.

4 Select [Set] from [Mode] at the top left.

- The mouse pointer turns into a pencil.
- Moving the mouse pointer into the weekday band in the calendar section activates the zoom in/zoom out mode. Enlarge the calendar to check detailed schedules.







5 Select the [Online] check box, move the mouse pointer while left clicking the mouse in the calendar section, then set a period.

You can set the following options by selecting [E-mail], [Patrolling] and [Speedup]:

[E-mail]:

Select this check box to set the period when the e-mail alert has been selected triggered by an event or motion. (☞ Page 47)

[Patrolling]:

Select this check box to set the period when the patrolling has been selected. Make sure to select the one set in the patrol scheme. (☞ Page 45)

[Speedup]:

Select this check box to set the period when [Enabled] has been selected from the [Speedup] in the [Camera Settings].

[Audio]:

You cannot select this check box.

6 Select the following as the [Online Method] screen appears:

- Select from [Always] or [On Event].
- If you select [On Event], you will have to specify the start and stop events.

Note

- To cancel the period, select [Clear] from [Mode] at the top left, select the check box you want to cancel ([Online], [E-mail] or [Patrolling]), then move the mouse pointer while left-clicking the mouse on the period in the calendar section.

●Buttons

Copy Schedule:

Lets you copy the schedule displayed in the calendar section.

Paste Schedule:

Lets you paste a copied schedule in the Copy Schedule for use with the selected camera.

Copy and Paste to All:

Lets you copy the schedule displayed in the calendar section and paste it to all Cameras at once.

Exit:

Closes the [Camera/Alert Scheduler] window.

●The calendar uses colored bars to indicate active periods for each option (Online, E-mail, Patrolling.):

■ Online bar

Pink:

Indicates the period in which the VR-N900U always obtains images from the selected camera.

Yellow:

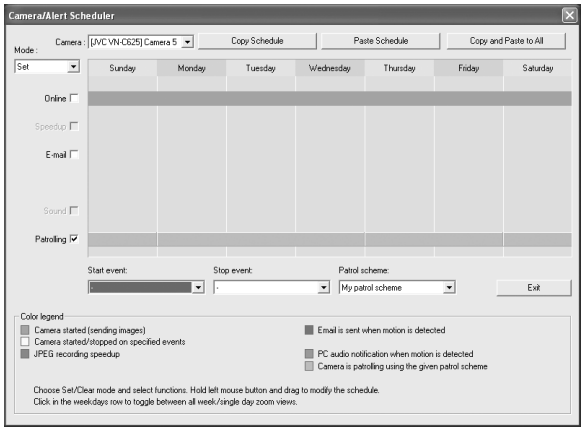
Indicates the period in which the VR-N900U obtains images from the selected camera when the specified event is input to the VR-N900U.

■ E-mail bar

Active periods are indicated in blue.

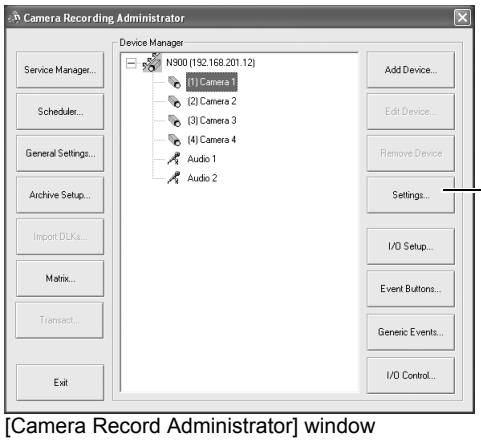
■ Patrolling bar

Active periods are indicated in gray. The Patrolling bar is only available if you have selected a PTZ camera which has at least one patrol scheme. When several patrol schemes have been set up and are used successively, changes between the schemes are indicated by a thin vertical line.



Camera Administration

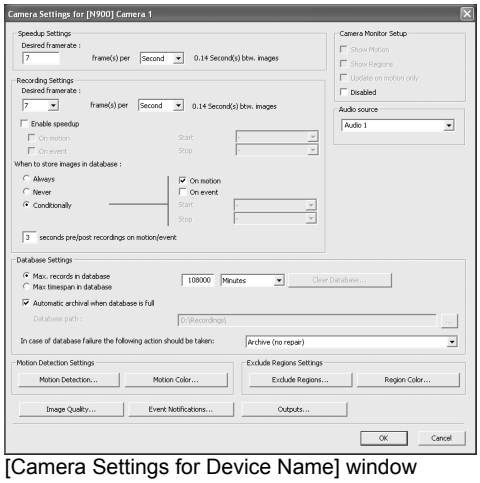
1 Select [Camera Record Setting] in the Main Menu.



[Camera Record Administrator] window

2 Select the required camera in the [Device Manager] section and click the [Settings] button.

The [Camera Settings for Device Name] window will appear.



[Camera Settings for Device Name] window

The [Camera Settings] window lets you set the following items.

● **Speedup Settings**

Framerate:

Lets you specify the frame rate acquired from the camera. It is the frame rate at the time of live viewing and speedup recording.

CAUTION

- Do not set a value that exceeds camera capacity.
- If the frame rate is not specified for the camera, a frame rate supported by the camera is set.

● **Camera Monitor Setup**

Select [Disabled] to disable the camera.

● **Audio source**

You can select the audio source played back when a camera is selected in view.

● **Image storage settings**

Desired framerate:

Lets you specify the recording frame rate. You cannot select a higher value than the [Framerate] specified in the [Speedup Settings].

CAUTION

- Make sure to set the frame rate so the total rate for all cameras is displayed view on the [Live Viewing] window at 60ips (image/sec.) or less for each view.
- The recording frame rate for the system is below 120ips. Set the total frame rate of all cameras to be below 120ips. When [Speedup Settings] is used, set the recording frame rate from the frame rate of [Speedup Settings].
- When images from analog cameras are recorded, set the total frame rate for analog cameras at 20ips or less.
- Recording frame rate may fall below the setting depending on the signal processing condition of the VR-N900U.
- Recording frame rate may fall under the following conditions:
  -during exports
  -when image quality is changed for images displayed
  -when total frame rate for images displayed exceeds 60ips (including images displayed on the computer screen)
- In case of high frame rate settings, the recording frame rate will measurably increase or decrease.

Speedup:

Lets you specify whether or not to maximize the frame rate if motion is detected or an event occurs.

Use of speedup on event requires that you define the events for starting and ending the speedup.

When to store images in database:

Lets you specify the recording conditions in recording control mode.

When you select [Conditionally], specify required conditions in the following fields.

Always:

Select the check box to record images at all times.

On motion:

Select check box to store all images in which motion is detected.

On event:

Select check box to store all images, regardless of motion, when an event occurs and until another event occurs, then select required start and stop events in the [Start] and [Stop] lists.

For details on event setting, refer to “Camera Input/ Output Port and Events”. (☞ Page 47)

Note

- The alarm indicator of front panel lights up when the motion or event that was set with [When to store images in database] occur regardless to the recording status. The alarm indicator will turn off when the [ALARM CLEAR] button is pressed.

[Number of] seconds pre/post recordings on motion/ event:

You are able to store recordings from periods preceding and following detected motion and/or specified events. Specify the number of seconds for which you want to store images from before and after the recording. Please do not set it at 0 (zero) second.

If Offline is selected in [Scheduler], images will not be recorded.

Manual recording, emergency recording and recording with EXT REC input will not be effected.

● **Database Settings**

Lets you specify the Database Settings. (☞ Page 56)

● **Motion Detection Settings**

Motion Detection:

Lets you specify two parameters for motion detection, [Sensitivity] and [Threshold]. (☞ Page 54)

Motion Color:

Lets you specify the color to be used for highlighting detected motion.

● **Exclude Regions Settings (☞ Page 54)**

Lets you specify Exclude Regions Settings, certain areas of the camera's images in which motion detection is disabled.

Region Color:

This button is disabled.

● **Image Quality**

Lets you specify image resolution and quality-related settings.

● **Event Notifications**

Lets you select events for triggering event indications. (☞ Page 52)

● **Outputs**

Let you specify output settings. (☞ Page 53)

● **PTZ Preset Positions**

Lets you specify preset positions and patrolling. (☞ Page 45)

When a configurable camera is selected, this button is displayed on the right side of the [Output] button.

CAUTION

- When the recording program (recording server) is operating, the [PTZ Preset Position] button is disabled. Pause the recording server by clicking the [Service Manager] button in the [Camera Record Setting] window (☞ Page 38), and then click the [Pause] button.
- The video or audio will not be recorded while the recording program (recording server) is paused. Also, the live images to the surveillance computer are turned off.
- In recording control mode, images will not be recorded during the offline period specified in the [Scheduler] settings even when [Always] is selected in [When to store images].
- Clicking [Cancel] does not cancel image quality and settings made in another window.

Setting the image quality

When adjusting camera settings, you are able to view the effect of your settings by clicking the [Preview] button.

1 **Select [Camera Record Setting] from the [Main Menu].**

2 **Select the camera(s) from the [Device Manager] and click [Camera Setting].**

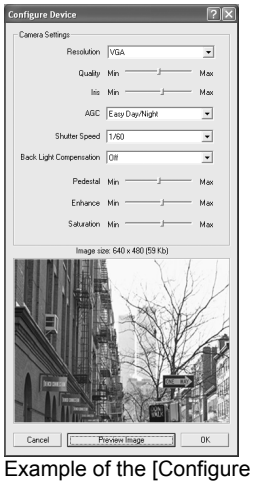
[Camera Setting] window will be displayed.

3 **Click [Image Quality].**

[Configure Device] window will be displayed.

CAUTION

- It is recommended to set the image quality to approximately 24KB. Specifying a higher image quality may affect the sound.



Example of the [Configure Device] window

Note

- For detailed information, please refer to the user manual of the cameras.
- The appearance of the [Configure Device] window depends on camera model.

Screen Setup

About Groups and Views

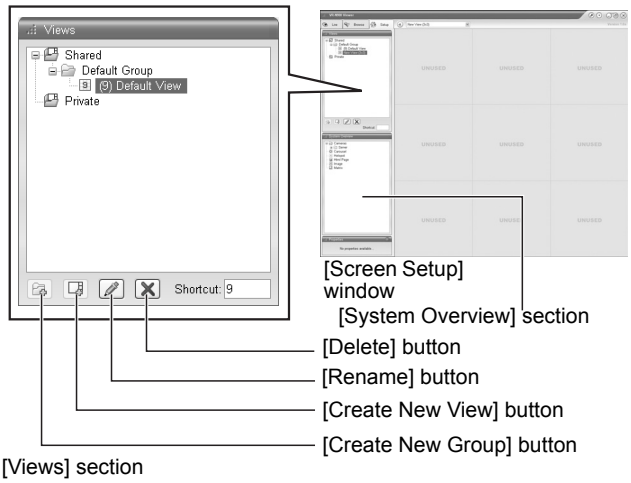
Multi-view setting from multiple camera(s) is called “view”. All views are placed in folders called groups.

- Groups can be private or shared.

■ Private:
Views in this folder can only be accessed by the user who created them.

■ Shared:
Views in this folder can be accessed by all remote users with access to the system.

☞“For detailed information, please refer to the user manual of the cameras.”



CAUTION

- The default user setting is [Administrator].
- The Default View created by the Auto Detect Setting may change camera placement in the view. To maintain a specific placement, name the view and save it.
- A [Save ViewGroup Error] message may appear when an attempt to modify a view in a shared folder is made. Should this happen, click the [OK] button to close the window and log out (☞ Page 72) from the VR-N900 Viewer once, and then login again.

- You cannot use 2-byte character in the name for the new groups or new views.

Creating Groups and Views

●Creating Groups

1 Select [Screen Setup] from the Main Menu.

If the [Live Viewing] window or [Browse] window is displayed, you can also click the [Setup] tab with the mouse.

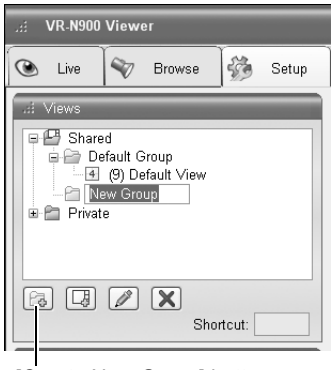
Main Menu

2 Select the type of group you want to create in Views.

[Screen Setup] window

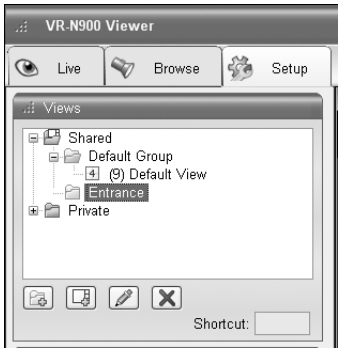
3 Click the [Create New Group] button in the [Views] section.

A new group will be created.



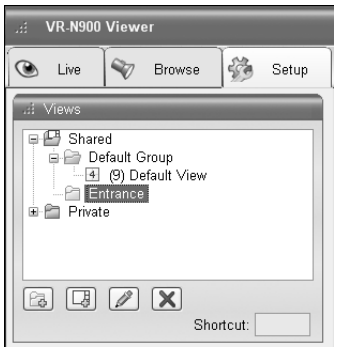
[Create New Group] button

4 Enter a group name of your choice.

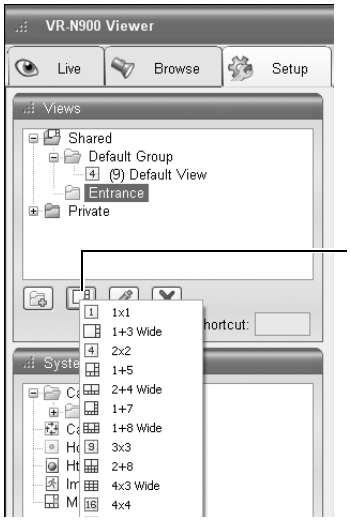


●Creating a [View] in a [Group]

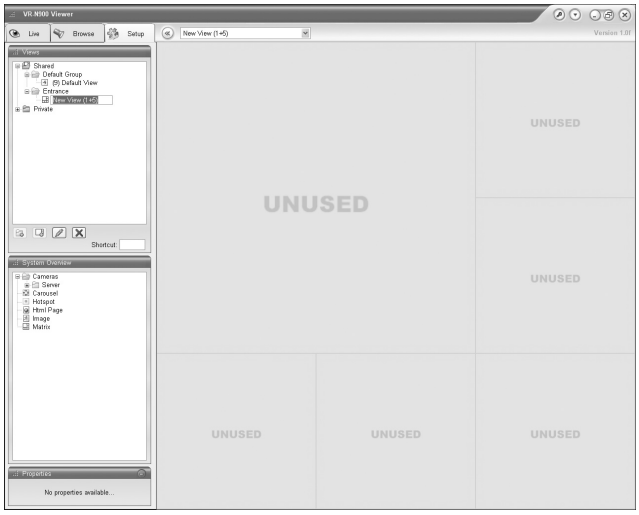
1 Select the group in which you want to create the view.



2 Click the [Create New View] button.



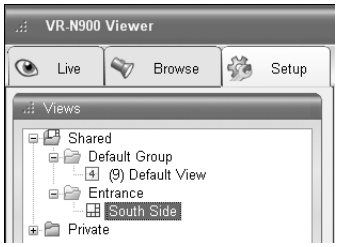
A new view is created under the group you selected.



CAUTION

- Do not display more than 10 windows at once.

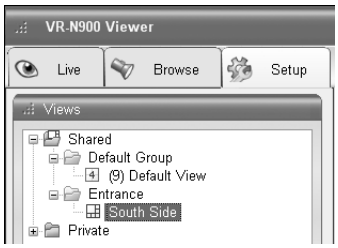
3 Enter a view name of your choice.



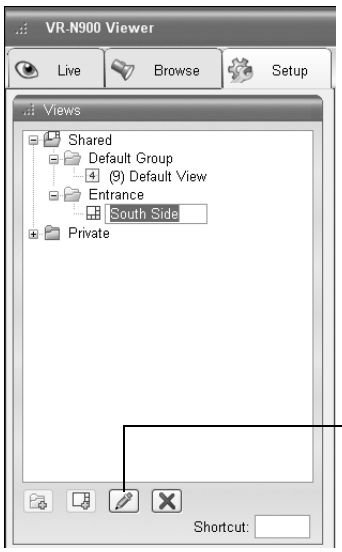
Next, add cameras to the view. (☞ Page 32)

●Renaming [Groups] or [Views]

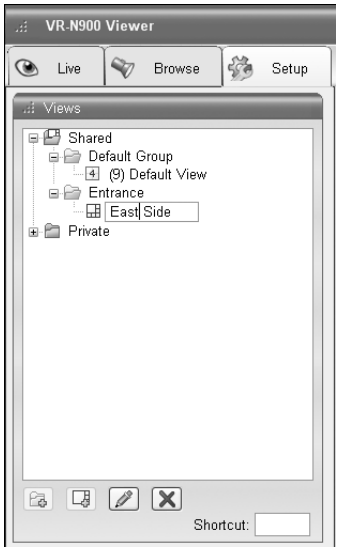
1 Select the group or view that you want to rename in the Views section.



2 Click the [Rename] button.



3 Overwrite the existing group or view name with a new name of your choice.



●Deleting Group(s) or View(s)

1 Select the group(s) or view(s) that you want to delete in the Views section.

2 Click the [Delete] button.

You will be asked to confirm whether you want to delete the selected group and all of its contents or whether you want to delete the selected views.

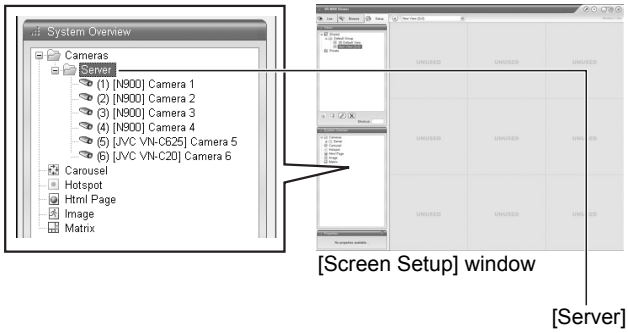
Adding Cameras to a View

1 Select a View.

The layout of the selected view will appear.

2 In the [System Overview] section, click the plus sign next to the required [Server].

A list of available cameras will appear.



3 Select the camera you want to add from the list and drag the camera name on top of the view screen in the view on the right.

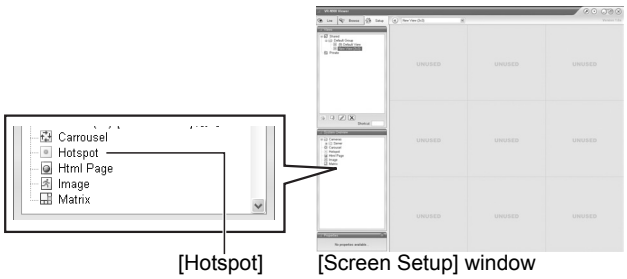
- An image from the selected camera will appear, together with the camera name.
- Repeat the procedure for each camera that you want to add.
- Images from a total of 9 cameras can be simultaneously displayed.

Adding Hot Spots (Enlarged Images)

The selected camera within the view will display in the hot spot designated position. Setting the hot spot in a larger position, for example, in 1 of [1+7] view displays an enlarged image when hot spot is selected.

1 Display the [Screen Setup] window.

2 Click and drag the [System Overview] section's [Hotspot] icon to the required position in the view.



3 Drop the [Hotspot] icon over the required position.

4 Select the hotspot position and specify its properties in the [Properties] section.

Image Quality:

Always select [Full] for the adjustment of the image quality and resolution of the images that are displayed.

Frame Rate:

Select between [Unlimited] (default), [Medium] (25% of original frame rate) or [Low] (one frame per second).

Maintain Image Aspect Ratio:

If this check box is selected, the cameras' original image aspect ratio will be maintained.

CAUTION

- The recording frame rate may decrease when the image quality is set to [High] or [SuperHigh (for megapixel)].

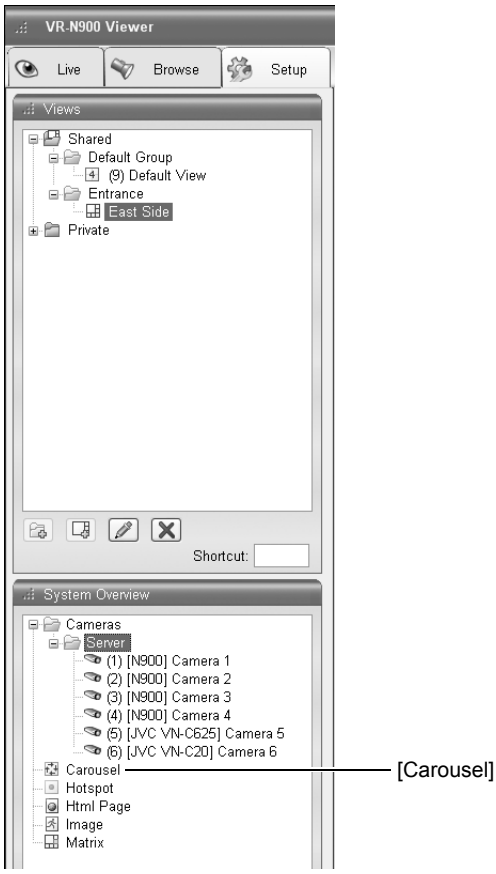
Note

- What makes the hotspot function useful is that with a hot spot you can use a low frame rate for other cameras and a high frame rate for the hot spot.
- The orange border indicates that the position is used for a hotspot.
- When the hot spot is set with multiple views and these views are set to changeover, after setting these views to changeover, the camera image displayed with view before the changeover setting continues to display in the hot spot window.

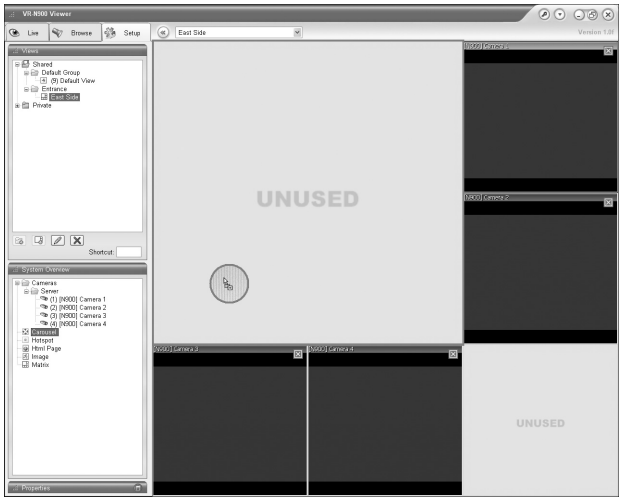
Adding Carousels

A carousel is used for displaying images from several cameras, one after the other, in a single view position. Also, you can set the changeover intervals of the required camera.

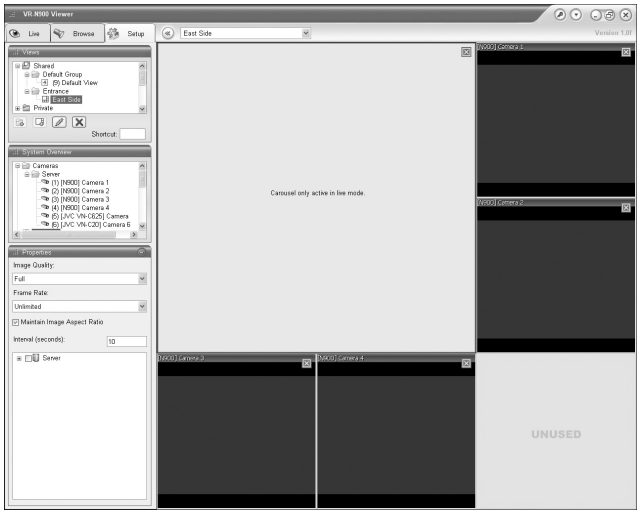
1 Display the [Screen Setup] window.



2 Click and drag the [System Overview] section's [Carousel] icon to the required position in the view.



3 Drop the [Carousel] icon over the required position.



4 Select the carousel position and specify its properties in the [Properties] section.

Begin by selecting which cameras to include in the carousel. You are also able to select all cameras on a server at once by selecting the check box next to the server icon.

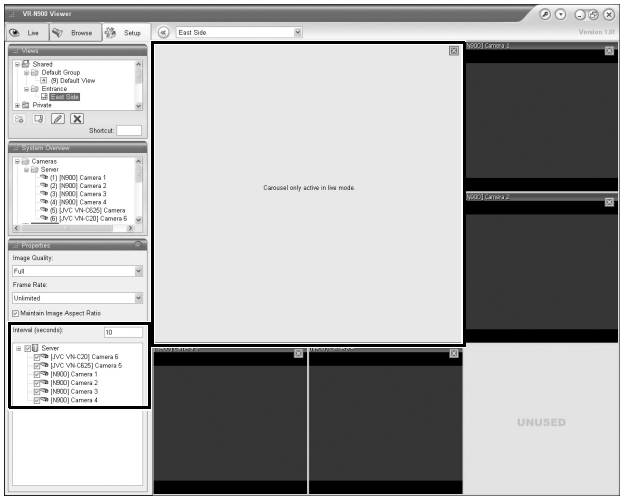


Image Quality:

Always select [Full] for the adjustment of the image quality and resolution of the images that are displayed.

Frame Rate:

Select between [Unlimited] (default), [Medium] (25% of original frame rate) or [Low] (one frame per second).

Maintain Image Aspect Ratio:

If this check box is selected, the cameras' original image aspect ratio will be maintained.

CAUTION

- The recording frame rate may decrease when the image quality is set to [High] or [SuperHigh (for megapixel)].
- Since the [Image Quality] setting will effect on the recording capacity, please use this function with the [Full] image quality property.

Note

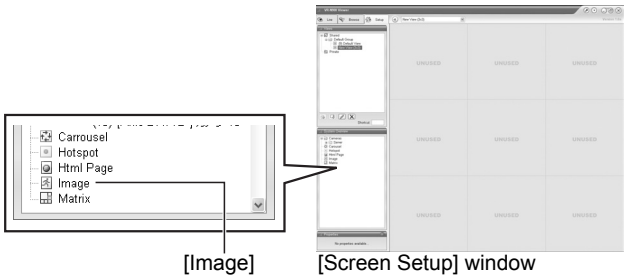
- The green border indicates that the position is used for a carrousel.
- The sequence in which cameras will appear in the carrousel is automatically determined by their names. The cameras will appear in alphabetical order, then loop continuously.

Adding Matrix Content

Settings for using Milestone XProtect Matrix made by Milestone Systems. For detailed information, please refer to the Smart Client 3.0 User's Manual (http://milestonesys.com/?cid=265).

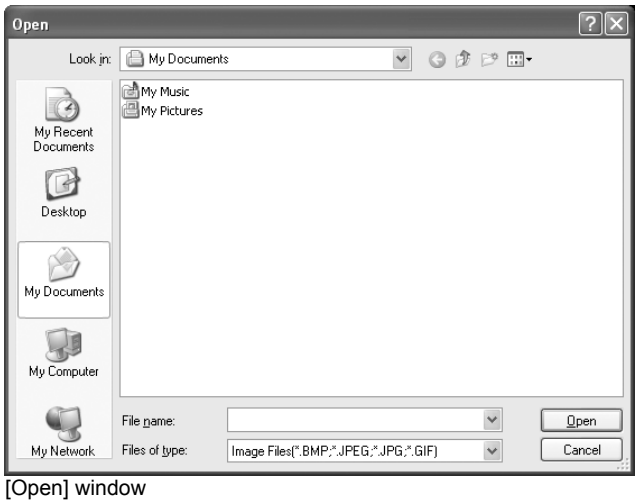
Using Static Images (GIF files, JPEG files, etc.)

1 Click [Image] in the [System Overview] section.



[Image] [Screen Setup] window

2 Drag and drop the [Image] icon to the required position.



[Open] window

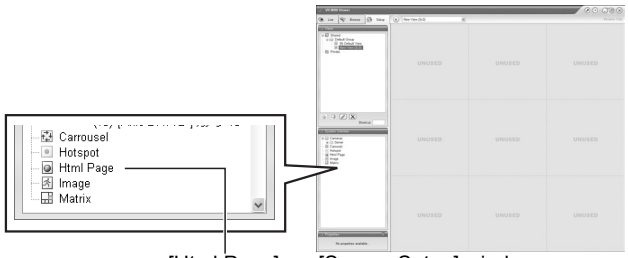
3 Select the required image file.

CAUTION

- When connected to a surveillance computer, the fixed images that were set with a different computer will not be displayed.
- Static images cannot be added to the VR-N900U.

Using HTML Pages

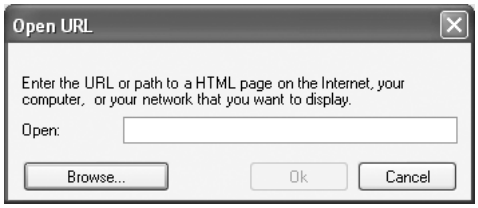
1 Click [Html Page] in the [System Overview] section.



[Html Page] [Screen Setup] window

2 Drag and drop the [Html] icon to the required position.

The [Open URL] window will appear.



[Open URL] window

3 Type the URL and click the [OK] button.

4 Select the HTML page in the view and specify its properties in the [Properties] section.

Url:

Click the [New] button to specify a new URL.

Scaling:

Select the required scaling of the HTML page.

Enable HTML scripting:

Select this check box to specify HTML files that contain navigation or trigger functions.

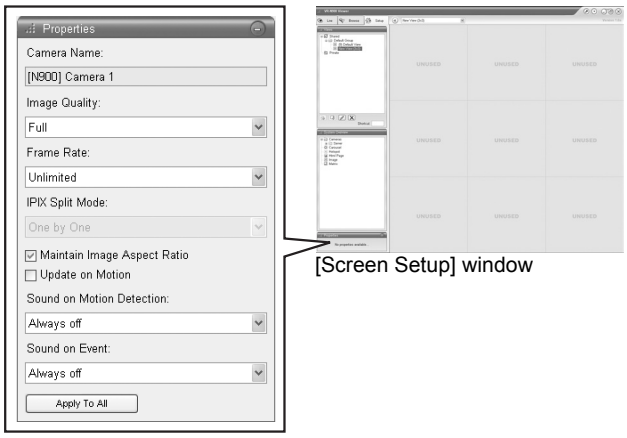
CAUTION

- Pages containing such content as ActiveX and Flash will not be supported.
- Please do not install the ActiveX.
- Note that some links may involve security issues.

Adjusting Camera Settings

1 Select the camera you want to adjust in the [Screen Setup] window.

2 Select [Properties] with the mouse.



[Screen Setup] window

3 Adjust the following camera settings when necessary.

Camera Name:

Displays the name of the selected camera. The field is read-only.

Image Quality:

Always select [Full] for the adjustment of the image quality and resolution of the images that are displayed.

Frame Rate:

Sets the recording frame rate for the selected camera. The default setting is [Unlimited].

Maintain Image Aspect Ratio:

If this check box is selected, images will not be stretched to fit the size of the camera position. Rather, images will be displayed with the aspect ratio with which they have been recorded.

Update on Motion:

If this check box is selected, the camera's images will only be updated on the [Live Viewing] window when motion is detected.

Sound on Motion Detection:

When images from the camera are viewed on the [Live Viewing] window, it is possible to get a simple sound notification when motion is detected.

Always off:

Do not use sound notifications on detected motion.

Always on:

Play a sound notification each time motion is detected on the camera.

Sound on Event:

When images from the camera are viewed on the [Live Viewing] window, it is possible to get a simple sound alert when events related to the selected camera occur. Being able to use this feature requires that notifications on events have been configured. (☞ Page 52)

Always off:

Does not sound alerts when events related to the camera occur.

Always on:

Play a sound alert each time an event related to the camera occurs.

CAUTION

- Set the VR-N900U so that the total frame rate that appears on all surveillance computers is 30 ips or less.
- The recording frame rate may decrease when the image quality is set to [High] or [SuperHigh (for megapixel)].
- The alert sound at the time of motion detection and on event will not output from VR-N900U. This function is for the downloaded VR-N900 Viewer.

4 To adjust the settings on other cameras, repeat steps 2 and 3.

Note

- To adjust the settings of all cameras at once, click the [Apply To All] button. The adjusted camera settings will be applied to all cameras in the view.

Using Your Views on Different Computers

Your user settings, including your private views, are stored on the VR-N900U. This means that you can use your private views on any surveillance computer (☞ Page 69) that has a [VR-N900 Viewer] and VR-N900U installed and by logging in with your own user name and password.

1 Click the [Setup] tab in the [VR-N900 Viewer].

CAUTION

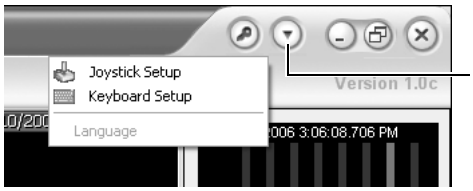
- Particular user rights may be required in order to access the [Setup] tab. When this is the case, consult your system administrator.

2 Select the folder you want to use in the [Views] section.

- You can create and edit views.
- Folders to which you cannot edit will be indicated by padlock icons.

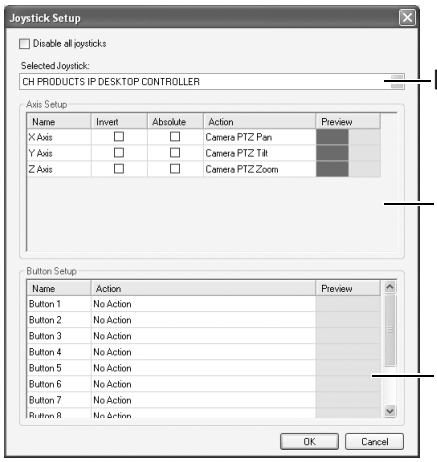
Customizing Joystick Setup

1 **Click the [▼] button on the right side of the window's tool bar.**

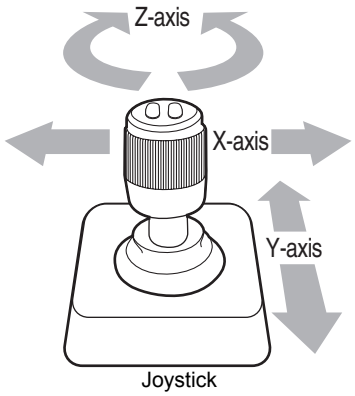


2 **From the menu that appears, select [Joystick Setup].**

3 **Select the required joystick in the [Selected Joystick] list.**



4 **In the [Axis Setup] section, specify settings for the available axes.**



Invert:

By default, a PTZ camera will move to the right when you move the joystick to the right along the X-axis, move up when you move the joystick towards you along the Y-axis, etc. By selecting [Invert], you are able to change this to the opposite.

Absolute:

By selecting [Absolute], The angle of the joystick corresponds to the direction of the camera.

Action:

Lets you select the required action for an axis.

Camera Pan:

Moves the camera horizontally

Camera Tilt:

Moves the camera vertically

Camera Zoom:

Zooms in and zooms out

No Action:

No action is taken

Preview:

You can check how each camera moves on each axis with the joystick.

5 **In the [Button Setup] section, specify an action for each required joystick button.**

Select the required action in the [Action] column.

● **Disabling the Joystick**

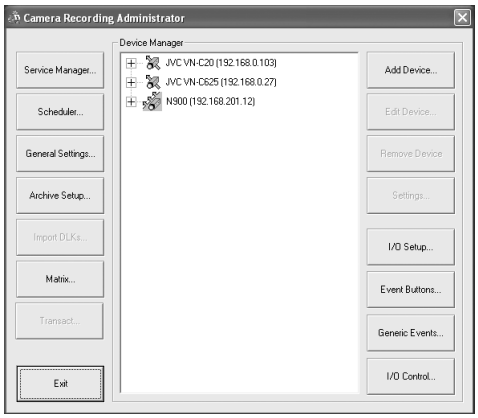
To disable the use of joysticks, select the [Disable all joysticks] check box.

Camera Record Setting Window

Display the [Camera Record Setting] window

1 Select the [Camera Record Setting] in the Main Menu.

The [Camera Record Setting] window will appear.



[Camera Record Setting] window

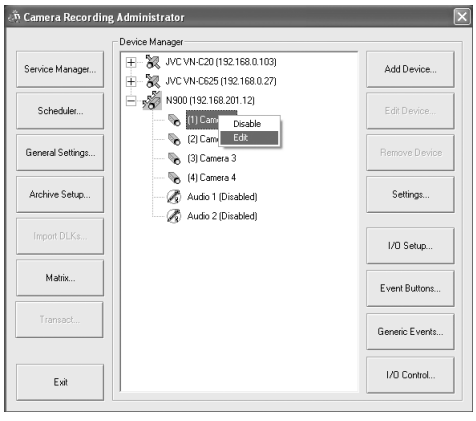
● **Device Manager Section**

The [Device Manager] section lists all added devices and attached cameras.

The [Device Manager] section thus provides you with an overview of your surveillance system.

Renaming Cameras and Assigning Camera Numbers

Right-click the name of the required camera, then select [Edit] from the menu that appears.



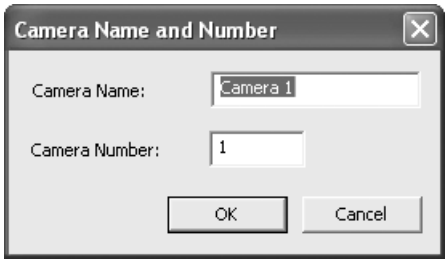
The following items can be specified.

Camera Name:

Displays the name of the camera. If required, you are able to overwrite the existing camera name with a new one.

Camera Number:

Lets you specify the camera number.

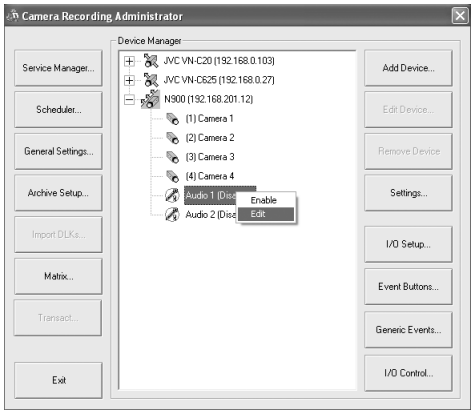


CAUTION

- It is highly recommended that you use an alternative camera number for each camera. When the camera numbers have overlapped, the camera may not operate properly.

Editing Settings for Audio Sources

To edit the settings for an audio source listed in the [Device Manager] section, click the plus sign next to the device to which the audio source is attached, select the required audio source, then click the [Settings] button.



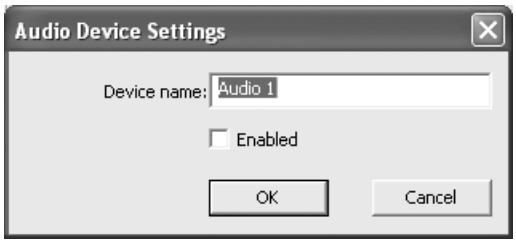
The following items can be specified.

Device name:

Displays the name of the audio source. If required, you are able to overwrite the existing audio source name with a new one.

Enabled:

Lets you enable/disable use of the audio source. The enabled audio source will be recorded.



Disabling/Enabling Cameras and Audio Sources

Right-click the required camera or audio source in the [Device Manager] section, then select [Disable] or [Enable].

● **Buttons**

Service Manager:

The [Service Manager] button opens the small [Service Manager] window, which lets you pause/resume the recording program “Recording Server”. Pausing the service is necessary in order to access some features, for example configuration of PTZ cameras.

CAUTION

- While the service is paused, video or audio will not be recorded. Also, the live images to the surveillance computer are turned off.

Scheduler:

Opens the [Camera/Alert Scheduler] window. (☞ Page 26)

General Settings:

Opens the [General Settings] window. (☞ Page 55)

Archive Setup:

Opens the [Archive setup] window. (☞ Page 57)

Matrix:

This setup is required when the Milestone XProtect Matrix is used. For details, refer to the Milestone XProtect Matrix manual.

Add Device:

Starts the [Device Setup Wizard]. (☞ Page 40)

Edit Device:

Opens the [Edit device settings] window. (☞ Page 41)

Remove Device:

Lets you remove a device selected in the [Device Manager] section.

Settings:

Lets you specify settings for a selected camera or audio source.

I/O Setup:

Opens the [I/O Setup] window. (☞ Page 47)

Event Buttons:

Opens the [Event Buttons] window. (☞ Page 50)

Generic Events:

Opens the [Generic Events] window. (☞ Page 51)

I/O Control:

Opens the [I/O Control] window. (☞ Page 53)

Exit:

Closes the [Camera Record Setting] window.

● **Analog Cameras**

In the VR-N900U, analog input circuitry is considered a network encoder (IP video server) and the IP address 192.168.201.12 has been set. The registered address [N900 (192.168.201.12)] will appear in the [Device Manager] section on the [Camera Record Setting] window.

The analog cameras that are connected to [VIDEO IN 1-4] terminals on the rear panel correspond to N900 cameras 1 to 4.

You can change the default name (N900) by clicking the [Edit Device] button, but you cannot change the IP address (192.168.201.12).

Note

- The audio signal which is inputted into [AUDIO IN] audio input terminal 1 and 2 of the rear panel will record and archive as the audio of the analog camera which is connected to [VIDEO IN] camera image signal input terminal 1 and 2. (Same applies for the network encoder which has the multiple image and audio input terminals of VN-E4, etc.)

Adding Cameras

Camera are connected to devices, so first it is necessary to add the required devices such as network camera or network encoder (IP video server) to the system. Devices have their own IP addresses or host names and the system identifies the devices based on their IP addresses or host names.

- Even though each device has its own IP address or host name, when connecting several analog cameras to a network encoder (IP video server), several cameras can be attached to a single device and thus share the same IP address or host name. In this case, several cameras are attached to a single device, but they can be configured and used individually with this equipment.
- In addition to network camera and network encoder (IP video server), it is possible to add a number of dedicated I/O (input/output) devices. When such I/O devices are added, they can be used in events-based system setup in the same way as a camera.
- When a device is added to the system, it is listed in the [Camera Record Setting] window. To add a device, follow the procedure below. First, configure the IP address and password of the device itself as described in the camera manuals.
- If user access is restricted, another camera cannot be added. For details on access restriction, please refer to the user manual of the cameras.
- If the camera is registered in user access restriction ON state, the camera will be registered with access restriction and cannot display the live images unless modified.

1 Select the [Camera Record Setting] in the Main Menu.

2 Click the [Add Device] button.

This will start the Device Setup Wizard.

3 Enter the IP address or the DNS host name by which the system will identify the device.

If you enter the DNS host name, select the [Use DNS host names] check box. When ready, click [Next].

[Device Setup] Wizard

CAUTION

- By default, HTTP port 80 and FTP port 21 will be used for the device. If the device you are adding uses other port numbers, click the [Port Setup] button and specify the required port numbers. The need for specifying different ports may apply if the device is located behind a NAT enabled router or a firewall. When this is the case, configure the router or firewall so it maps the ports and IP address used by the device.

4 If a password is used for the device, enter the password.

Normally, a “root” or “admin” account is used. Leave the [Autodetect Device] option selected and click [Next].

5 When the device has been detected, assign a unique name to the device.

The name will be used in the list in the [Device Manager].

CAUTION

- You cannot use 2-byte character in the name.

6 Click [Finish].

To view a list of cameras attached to the device, click the plus sign next to the device name.

Note

- Cameras are listed for each device with default names, such as [Camera 1], [Camera 2], [Camera 3], [Camera 4], etc. To change the name of a camera, select the required device, then click the camera name.
- The camera number increases in order as cameras are added.
- You can also automatically register cameras. (☞ Page 62 “Auto Detect Setting”)

● **Adding an Analog Camera**

To add an analog camera manually, specify “192.168.201.12” as the IP address in the [Device Setup Wizard].

As no password has been specified, leave the password entry field blank and continue to the next step.

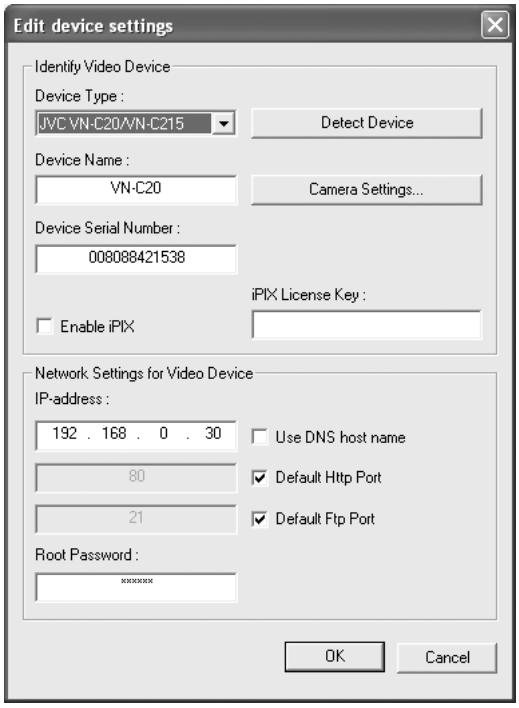
Note

• By default, analog cameras are already added.

[Edit Device Settings] window

The [Edit device settings] window lets you edit the settings of an already installed device.

To access the [Edit device settings] window, select the required device in the [Device Manager] section of the [Camera Record Setting] window, and click the [Edit Device] button.



[Edit device settings] window

The following items can be specified.

● **[Identify Video Device] Section**

Device Type:

Select required device type from list.

Detect Device:

Click this button to auto-detect device type and serial number.

Device Name:

Name used to identify the device. Device names must be alternative; you cannot use the same name for several devices.

Camera Settings:

Opens the [Camera Settings for Device Name] window. (☞ Page 42)

Device Serial Number:

Serial number of device; usually identical to the 12-character MAC address of the device.

● **[Network Settings for Video Device] Section**

IP-address:

IP address or DNS host name of the device.

Use DNS host name:

By selecting this check box, you are able to use a DNS host name for identifying the device instead of using the device’s IP address.

Default Http Port:

When selected, HTTP traffic to the device will go through the default port, port 80.

If you want to use another port for HTTP traffic to the device, clear the check box, and specify required port number in the field to the left of the check box.

Default Ftp Port:

When selected, FTP traffic to the device will go through the default port, port 21.

If you want to use another port for FTP traffic to the device, clear the check box, and specify required port number in the field to the left of the check box.

Root Password:

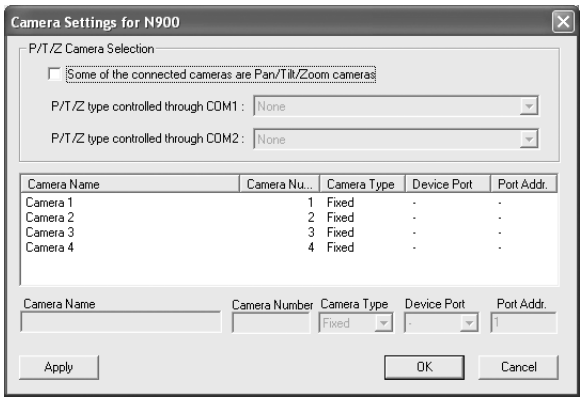
Enter the password in order to log in to the device using the root account (occasionally known as an admin or administrator account).

Note

When using the VN-C625/655, if a wrong password is entered and an error indication is not displayed, the live viewing may not be viewed and may not access to the camera properly.

[Camera Settings for Device Name] window

The [Camera Settings for Device Name] window lets you specify certain information about cameras. The number of settings available in the [Camera Settings for Device Name] window may be limited if cameras are not PTZ cameras or device connected to a network encoder (IP video server).
To access the [Camera Settings for Device Name] window, click the [Camera Settings] button in the [Edit device settings] window.



[Camera Settings for Device Name] window

The following items can be specified.

● **[P/T/Z Camera Selection] Section**

Some of the connected cameras are Pan/Tilt/Zoom cameras:

Select check box if any of the cameras attached to the network encoder (IP video server) device is a PTZ camera.

If the check box is not available, PTZ is not supported for the device.

P/T/Z type controlled through COM1:

If a PTZ camera is controlled through the COM1 port on the network encoder (IP video server), select the control method which conforms to the required PTZ camera from the list.

If no PTZ cameras are controlled through the COM1 port, select [None].

● **[Camera List]**

The camera list contains a line for each camera number on the device.

First line from the top corresponds to camera number 1, second line from the top corresponds to camera number 2, etc.

To change camera settings, select the required camera number from the list, specify required information in the following fields, and click the [Apply] button:

Camera Name:

Name used to identify the selected camera. Camera names must be unique for each device.

Camera Number:

Let you specify the camera number.

CAUTION

- It is highly recommended that you use a unique camera number for each camera.
- “Camera Name” is not the name which is set to the camera itself, the name is set to identify the cameras on VR-N900U.

Camera Type:

Lets you select whether the camera on the selected camera number is [Fixed] or [Moveable]:

Fixed:

Camera mounted in a fixed position

Moveable:

PTZ camera

Device Port:

Available only if [Moveable] is selected in the [Camera Type] field.

Lets you select which control port on the network encoder (IP video server) should be used for controlling PTZ functionality on the camera.

Port Address:

Available only if [Moveable] is selected in the [Camera Type] field.

Lets you specify port address of the camera. The port address would normally be 0 or 1.

If using daisy chained PTZ cameras, the port address will identify each of them, and you should verify your settings with those recommended in the camera manuals.

● **[CAMERA CONTROL] terminal on the rear panel**

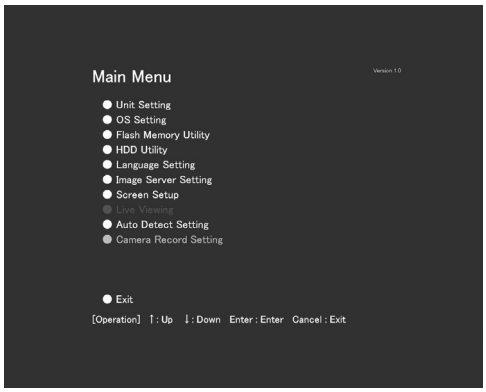
The VR-N900U is considered a network encoder (IP video server) in the system and a device name [N900] has been set. The [CAMERA CONTROL] terminal on the rear panel is displayed as [COM1] on the [Camera settings for N900] screen.

Defining a PTZ Preset Position

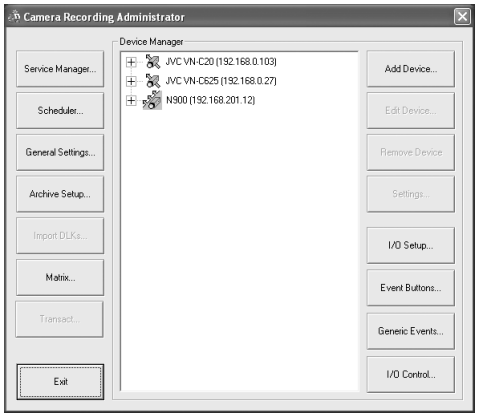
Pausing the Recording Server

When defining PTZ camera settings, it is necessary to pause the recording server.

1 **Select the [Camera Record Setting] in the Main Menu.**



Main Menu



[Camera Record Setting] window

2 **Click the [Service Manager] button.**

The [Service Manager] window is displayed.

[Service Manager] window

3 **Click the [Pause] button.**

CAUTION

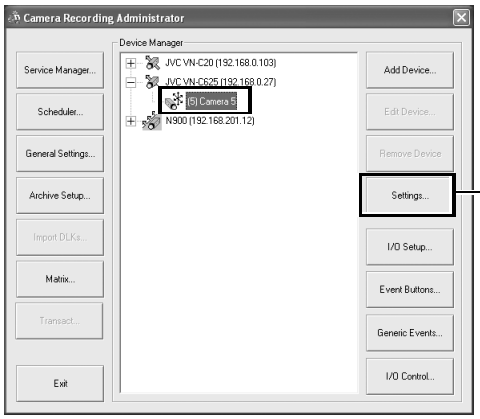
- No video or audio is recorded during a pause and the live images to the surveillance computer are also turned off.

Display the [PTZ Preset Positions] window

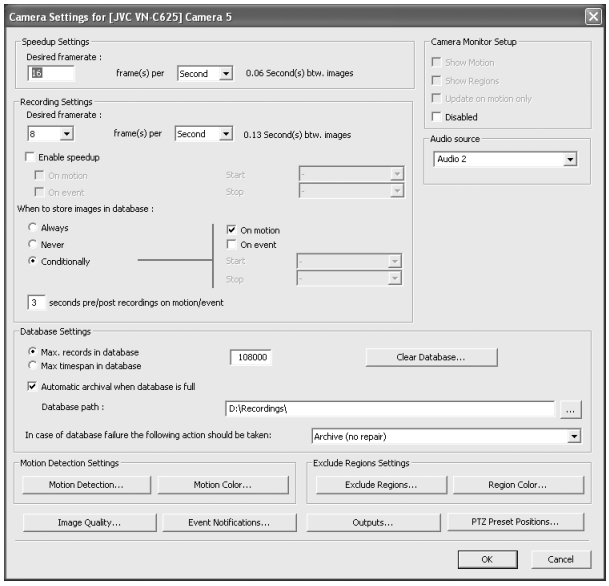
The [PTZ Preset Positions] window lets you define preset positions for the PTZ cameras.

1 **Select the [Camera Record Setting] in the Main Menu.**

2 **Select the required camera in the [Device Manager] section and click the [Settings] button.**



[Camera Record Setting] window



[Camera Settings for Device Name] window

CAUTION

- Depending upon the camera, several misalignments may occur in the preset position.

3 Click the [PTZ Preset Positions] button.

The [PTZ Preset Positions for Device Name] window will appear.

[PTZ Preset Positions for Device Name] window

The following configuration options are available in the [PTZ Preset Positions for Device Name] window.

● **[PTZ View] section**

Lets you move the PTZ camera to the required position. You can check the position in the preview.

● **[Preset Positions] section**

Lets you set, delete and test a PTZ camera position.

Use preset positions from device:

Available only for cameras supporting this feature.

Select the check box to use preset positions defined on the camera or network encoder (IP video server). To import PTZ preset positions from a device, first delete the PTZ preset positions of the recorder. Note that by doing this you lose all PTZ preset positions in the recorder.

CAUTION

- To import PTZ preset positions from a device, first delete the PTZ preset positions of the recorder. Note that by doing this you will lose all PTZ preset positions in the recorder.

Note

- In order for preset positions from the camera or network encoder (IP video server) to work with VR-N900U, the names of the preset positions must contain only the characters A-Z, a-z and 0-9, and must not contain spaces. Preset positions with names consisting of blank characters cannot be imported.

Set Position:

Associates the preset position selected in the list with the position specified in the [PTZ View] section.

Edit Name:

Lets you edit a preset position name selected in the list.

Test:

Lets you test a defined preset position. Select the required preset position in the list, then click the [Test] button. The effect is displayed instantly in the [PTZ View] section.

Delete:

Lets you delete a preset position selected in the list.

[▲], [▼]:

Lets you move a preset position selected in the list up and down respectively.

● **[Preset Position on Events] section**

You can make the PTZ camera go to particular preset positions when particular events occur.

● **[Patrolling] section**

Lets you configure PTZ patrolling.

For details of PTZ patrolling, refer to Page 45.

Defining a Preset Position

1 Display the [PTZ Preset Positions] window.

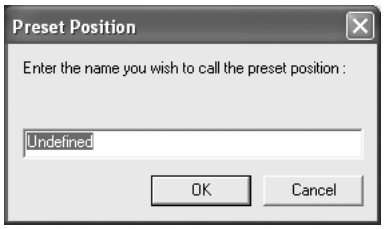
[PTZ Preset Positions for Device Name] window

2 Move the camera to the required position in the [PTZ View] section.

3 Select an undefined item from the list in the [Preset Positions] section.

- The position at the top of the list corresponds to No.1 preset position.
- You can define up to 50 preset positions.

4 Click the [Set Position] button to define a name for the preset position.



5 **To define another preset position, repeat steps *2* to *4*.**

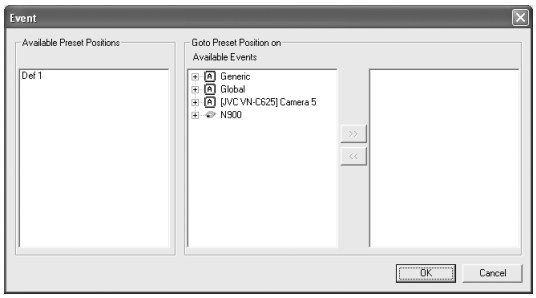
PTZ preset positions on events

This feature lets you make the PTZ camera automatically go to a particular preset position when a particular event occurs.

1 **Display the [PTZ Preset Positions] window.**

[PTZ Preset Positions for Device Name] window

2 **Click the [Setup] button in the [Preset Position on Events] section.**



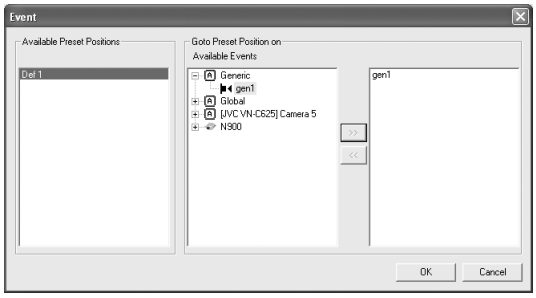
3 **Select the required preset position in the [Available Preset Positions] list.**

4 **Select the required event in the [Available Events] list.**

5 **Click the [>>] button.**

This will copy the selected event to the window's rightmost list, in which events associated with the selected preset position are listed.

To end the association between a particular preset position and a particular event, select the required event in the window's rightmost list, and click the [<<] button.



Auto PTZ Patrolling

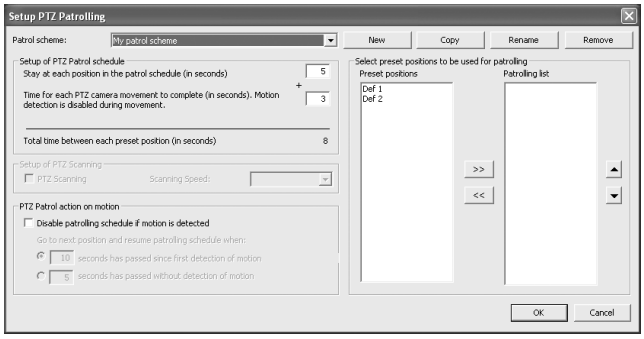
PTZ patrolling is the automatic movement of a PTZ camera between several preset positions.

1 **Display the [PTZ Preset Positions] window.**

[PTZ Preset Positions for Device Name] window

2 **Click the [Setup] button in the [Patrolling] section.**

The [Setup PTZ Patrolling] window will appear.



[Setup PTZ Patrolling] window

New:

Lets you add a [New patrol scheme] listing to the [Patrol scheme] list.

Copy:

Let you create a new patrol scheme based on an existing one. Select the required patrol scheme to copy in the [Patrol Scheme] list beforehand.

Rename:

Let you change the name of an existing patrol scheme. Select the required patrol scheme to rename in the [Patrol Scheme] list beforehand.

Remove:

Let you remove an existing patrol scheme. Select the required patrol scheme to remove in the [Patrol Scheme] list beforehand.

3 In the [Preset Positions] list, select the names of the preset positions you want to use, then click the [>>] button.

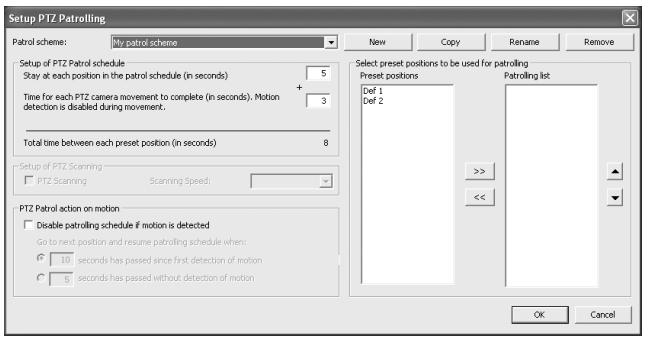
It will copy the selected preset positions to the [Patrolling list].
A preset position can be used more than once in a patrol scheme.
The camera will move between preset positions in the sequence they appear in the [Patrolling list], starting at the preset position listed first.
If you want to change the sequence of preset positions in the [Preset Positions] list, select a preset position name, and click the move up or move down buttons.
To remove a preset position from the [Patrolling list], select the preset position and click the [<<] button.

● **Specifying Timing Settings for a PTZ Patrol Scheme**

1 Select the required patrolling scheme in the [Patrol scheme] list.

2 In the [Stay at each position in the patrol schedule] field, specify the number of seconds for which the PTZ camera should stay at each preset position.

3 In the [Time for each PTZ camera movement to complete] field, specify the required movement time for the PTZ camera to move between preset positions.



[Setup PTZ Patrolling] window

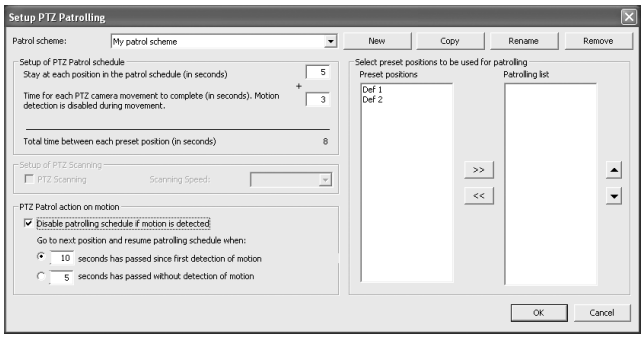
In order not to generate false motion alarms, motion detection for the PTZ camera is automatically disabled while the camera moves between two preset positions. After the specified number of seconds, motion detection is automatically enabled again.

CAUTION

- It is important that the camera is able to reach all of the patrolling scheme's preset positions within the number of seconds you specify. If not, false motion is likely to be detected.

● **PTZ Patrolling Actions on Detected Motion**

1 Select the [Disable patrolling schedule if motion is detected] check box.



[Setup PTZ Patrolling] window

2 Select whether the PTZ camera should resume patrolling:

- When a certain number of seconds has passed since first detection of motion, regardless whether further motion is detected,
  – or –
- When a certain number of seconds has passed without further detection of motion.

3 Specify the required number of seconds for selected option.

● **PTZ Scanning**

If your device supports PTZ scanning, the [Setup of PTZ Scanning] section lets you enable PTZ scanning and select a PTZ scanning speed.

CAUTION

- To define a patrol scheme, you must have specified at least two preset positions. You must also schedule use of the patrol schemes in the [Camera Record Setting] →[Scheduler] window.
- The patrolling of PTZ cameras may be interrupted, either manually or when a particular event occurs. The [Patrolling Settings] section of the [General Settings] window in [Camera Record Setting] lets you specify how many seconds should pass before patrolling is resumed. The settings in this section will apply for all PTZ cameras installed in the system. The default setting is 30 seconds.

Camera Input/Output Port and Events

The input/output port is the input/output terminal which is equipped in each device that is registered to VR-N900U. The input port as can be registered as “Input Event” and for the output port as “Output” can be registered. As for the registered input/output port, it is associated with the following explanation and which can be linked to this event. (☞“Specifying an Output Port” Page 53)

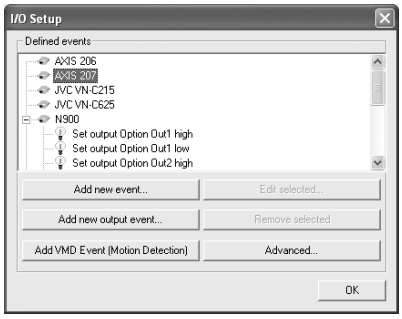
The event is utilized in order to start recording, transmit E-mail, move the PTZ camera to preset position, and to control the output port of the device. The event is divided into 4 types as described below.

- Input events: The input signal of the sensor connected to the input port of the device can be registered as “Input Event”.
- Generic events: It registers as the generic event.
- VMD (Video Motion Detection) events: It registers the motion detection of image as the VMD event.
- Event buttons: Events generated manually by clicking buttons.

I/O Setup

1 Click the [I/O Setup] button in the [Camera Record Setting] window.

- This will open the [I/O Setup] window.
- The [I/O Setup] window lets you add input events, VMD events and outputs that can be used for the network cameras.



[I/O Setup] window

Add new event:

Used for defining input events on the device selected in the [Defined events] list. Depending on the type of device, you may be able to define one or more input events on the device.

When you click the plus sign next to the device in the [Defined events] list, and select a defined input event, the [Add new event] button becomes available for defining timer events. (☞ Page 49)

Add new output event:

Opens the [Add New Output] window. (☞ Page 49)

Add VMD Event (Motion Detection):

Lets you add a VMD (Video Motion Detection) event to the device selected in the [Defined Events] list. Only one VMD event can be defined per camera.

CAUTION

- In order to avoid the risk of an excessively high number of VMD events being generated, a VMD event cannot occur more frequently than every five seconds.
- VMD events cannot be sent by e-mail.

Edit selected:

Lets you edit the settings for an item selected in the [Defined events] list.

Remove selected:

Lets you remove an event selected in the [Defined events] list.

Advanced:

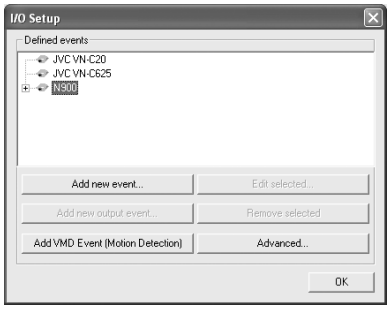
Opens the [Advanced] window. (☞ Page 50)

CAUTION

- The available events differ for each network camera.

Specify an input event

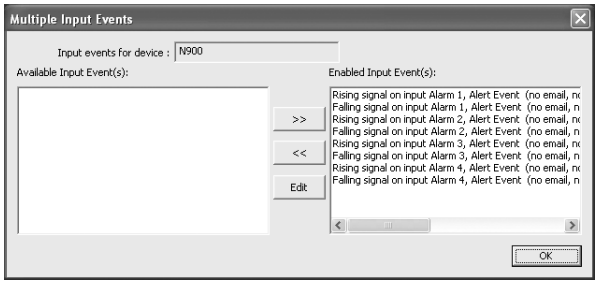
1 Select the required camera from the [Enabled Input Event(s)] list in the [I/O Setup] window.



[I/O Setup] window

2 Click the [Add new event] button.

The [Multiple Input Events] window will appear.



[Multiple Input Events] window

Input events for device:

Read-only field, displaying the name of the device on which the input events are defined.

Available Input Event(s):

Lists available input events for the device.

Enabled Input Event(s):

Lists enabled input events for the device.

[>>]**:** You enable an event by selecting it in the [Available Input Event(s)] list, then clicking the [>>] button.

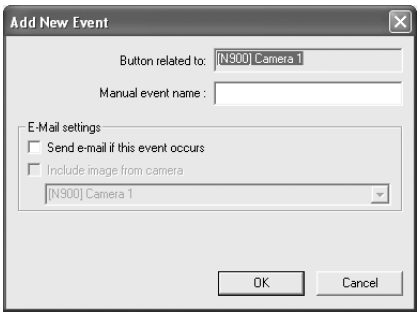
[<<]**:** Lets you move an input event selected in the [Enabled Input Event(s)] list to the [Available Input Event(s)] list, thus disabling it.

Edit:

Lets you edit the settings for an input event selected in the [Enabled Input Event(s)] list.

3 Select the required event from the [Available Input Event(s)] list and click the [>>] button to add it to the [Enabled Input Event(s)] list.

You can specify a name for the input event and any e-mail alerts to be associated with it in the [Add New Event] window.



[Add New Event] window

External event name:

Lets you specify a name for the particular input event.

Send e-mail if this event occurs:

Select check box to send an e-mail alert when the input occurs.

Include image from camera:

Select check box to include an image, recorded at the time the input event is triggered, in the e-mail alert, then select the required camera in the list next to the check box.

CAUTION

- In order to be able to use the [Add new event] button, events must have been defined for the network camera.
- The [Add new event] window may differ for the type of event that is added.
- When modifying the setting, the [SKIP] button, operation of the [right, left, up and down] buttons becomes disabled, use the software keyboard (☞ Page 6) or the mouse.

● **Input/Output Terminal on the Rear Panel**

The VR-N900U is considered as a network encoder (IP video server) in the system and a device name [N900] is set by default. The input/output terminals on the rear panel have been assigned to the [N900] device by default. Refer to the following tables for details.

Input terminals

Terminal	Name of input event	Description
Alarm IN 1	Alarm IN 1 Rising	Make signal input detection event
	Alarm IN 1 Falling	Break signal input detection event
Alarm IN 2	Alarm IN 2 Rising	Make signal input detection event
	Alarm IN 2 Falling	Break signal input detection event
Alarm IN 3	Alarm IN 3 Rising	Make signal input detection event
	Alarm IN 3 Falling	Break signal input detection event
Alarm IN 4	Alarm IN 4 Rising	Make signal input detection event
	Alarm IN 4 Falling	Break signal input detection event

Output terminals

Terminal	Name of output event	Description
OPTION OUT1	Set output Option Out 1 high	Outputs the Make status
	Set output Option Out 1 low	Outputs the Break status
OPTION OUT2	Set output Option Out 2 high	Outputs the Make status
	Set output Option Out 2 low	Outputs the Break status

CAUTION

- The output time length for the rear input/output terminals is limitless in practice although it is indicated as “0 sec.” in the output information.
- Output events on the rear input/output terminals cannot be deleted.
- All terminal input is treated as an alert, but the support (Sequence) of the starting recording will only be one terminal.

Specify a VMD event

1 Select the required camera to specify VMD event from the [Enabled Input Event(s)] list in the [I/O Setup] window.

2 Click the [Add new VMD event] button.

If the selected device is a multi-camera device, such as a network encoder (IP video server), a simple dialog in which you select the required camera will appear.

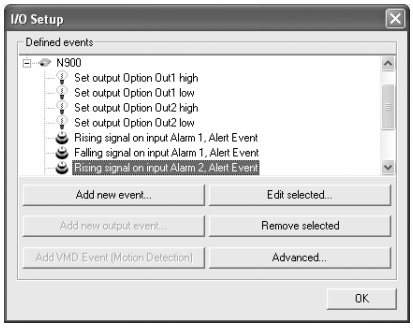
CAUTION

- In order to be able to use the [Add new VMD event] button, VMD events must have been defined for the network camera.

Configuring the settings for timer events

You can define a timer event under an added event.
Timer events are separate events, triggered by the input event under which they are defined. Timer events occur at the specified time lapsed after the input event under which they are defined.

1 Select the required event from the [Defined events] list in the [I/O Setup] window.



[I/O Setup] window

2 Click the [Add new event] button.

The [New Timer] window will appear.

[New Timer] window

3 Specify the required amount of time and a name for the timer event.

Timer event is started by:

Read-only field, displaying the name of the event or event button under which the timer event is defined.

Timer event name:

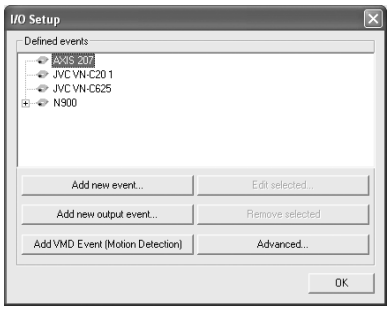
Lets you specify a name for the timer event.

Timer event occurs after:

Lets you specify the amount of time that should pass between the event occurring/event button being clicked and the timer event. Specify the required amount of time in either seconds or minutes.

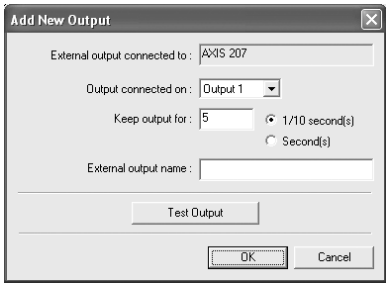
Specify an output

1 Select the required camera from the [Defined events] list in the [I/O Setup] window.



2 Click the [Add new output event] button.

The [Add New Output] window will appear.



[Add New Output] window

3 Select the output connection destination and specify the amount of time for which the output should be maintained and the name of the output.

External output connected to:

Read-only field, displaying the name of the device on which the output event is defined.

Output connected on:

Lets you select the connections of the device's output ports.

Keep output for:

Lets you specify the amount of time for which the output should be applied, in either 1/10 seconds or seconds.

External output name:

Lets you specify a name for the output.

Note

- When you have defined settings for the output, you are able to test the output by clicking the [Test Output] button.

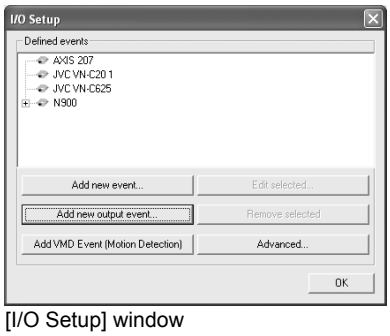
CAUTION

- In order to be able to use the [Add new output event] button, outputs must have been defined for the network camera.

Advanced Window

The [Advanced] window lets you specify network settings to be used in connection with event handling.

1 Click the [Advanced] button in the [I/O Setup] window.



[I/O Setup] window

2 Specify the following items.

Ftp Server Port:

Lets you specify port number to use for sending event information from the device to the surveillance system via FTP.

Alert Port:

Lets you specify port number to use for handling event based alerts, including Generic events.

SMTP Port:

Lets you specify port number to use for sending event information from the device to the surveillance system via SMTP.

Polling Frequency [1/10 sec]:

For a small number of devices, it is necessary for the surveillance system to regularly check the state of the devices' input ports in order to detect whether input has been received. Such state checking at regular intervals is called polling.

The [Polling Frequency] field lets you specify the interval between state checks. Interval is specified in tenths of a second.

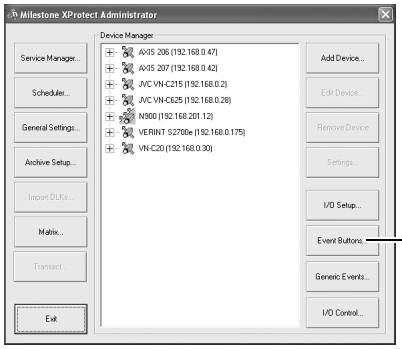
For I/O devices it is highly recommended that the polling frequency is set to the lowest possible value.

For information about which devices require polling see the instruction manual of input/output device.

Configuring Event Buttons

Event buttons allow users to manually trigger events from the [Live Viewing] window.

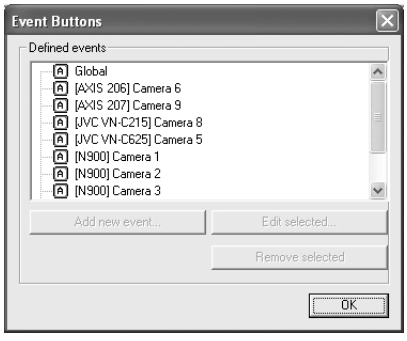
1 Click the [Event Buttons] in the [Camera Record Setting] window.



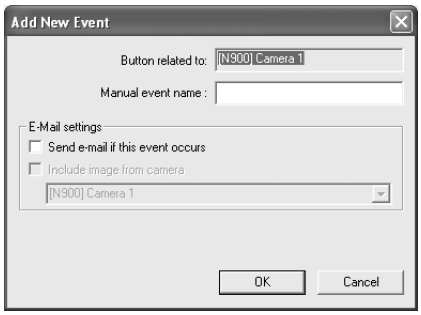
[Event Buttons]

[Camera Record Setting] window

2 Select a [Global] (available for all cameras) or a specific camera.



3 Click the [Add New Event] button to add an event button.



[Add New Event] window

Button related to:

Read-only field, displaying the name of the camera for which the event will be specified.

Manual event name:

Lets you specify a name for the event button.

Send e-mail if this event occurs:

Select check box to send an e-mail alert when the event button is clicked.

Include image from camera:

Select this check box to attach an image that is recorded at the time the event button is clicked, to an e-mail alert and then select the required camera in the list below the check box.

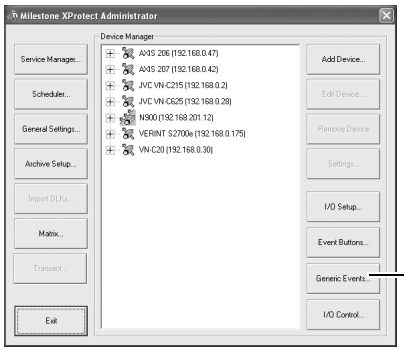
Note

- To define a timer event for an event button, select the required event that was added in step ***3***, then click the [Add New Event] button.

Specifying Generic Events

You can specify the settings for an event based on input from external sources using the TCP and UDP protocols. The event will be triggered if the received data meet specific criteria.

1 Click the [Generic Events] button in the [Camera Record Setting] window.



[Generic Events] button

[Camera Record Setting] window

Add new event:

Lets you define new events.

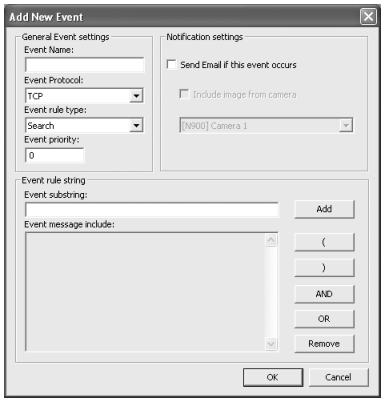
Edit selected:

Let you edit the settings for an existing event selected in the [Defined events] list.

Remove selected:

Lets you remove an existing event selected in the [Defined events] list.

2 Select Generic and click the [Add new event] button.



[Add new event] window

● **General Event Settings**

Event Name:

Lets you specify a name for the event. Each event must have a unique name.

Event Protocol:

Lets you select which protocol VR-N900U should listen for in order to detect the event:

Any:

Listen for, and analyze, packages using TCP as well as UDP protocol.

TCP:

Listen for, and analyze, packages using TCP protocol only.

UDP:

Listen for, and analyze, packages using UDP protocol only.

Event rule type:

Lets you select the analyzing method of the received packages:

Match:

In order for the event to be triggered, the received package must contain exactly the message specified in the [Event rule string] section's [Event message include] field, and nothing else.

Search:

In order for the event to be triggered, the received package must contain the message specified in the [Event rule string] section's [Event message include] field. Other messages may be included.

Event priority:

The same data package may be analyzed for different events. The ability to assign a priority to each event lets you manage which event should be triggered if a received package matches the criteria for several events. The priority must be specified as a number between 0 (lowest priority) and 1000 (highest priority).

Note

- VR-N900U listens for generic events on the port specified as [Alert Port] in the [Advanced] window.

● **Event Rule String**

Event substring:

Lets you specify the individual items for which VR-N900U should look out when analyzing data packages.

Specify one or more terms, then click the [Add] button to add the specified term(s) to the [Event message include] field.

When you add several terms as one item, everything between the quotation marks must appear together in the package, in the specified sequence, in order to match your criterion.

Event message include:

Displays the string which will be used for the actual package analysis. The field is not directly editable. However, you are able to position the cursor inside the field and click the following buttons.

Add:

Adds the content of the [Event substring] field to the [Event message include] field.

(:

Lets you add a start parenthesis character to the [Event message include] field.

Parentheses can be used to ensure that related terms are processed together as a logical unit; in other words, they can be used to force a certain processing order in the analysis.

) :

Lets you add an end parenthesis character to the [Event message include] field.

AND:

Lets you add an AND operator to the [Event message include] field. With an AND operator you specify that the terms on both sides of the AND operator must be present.

OR:

Lets you add an OR operator to the [Event message include] field. With an OR operator, you specify that either one or another term must be present.

Remove:

Lets you remove the item immediately to the left of a cursor positioned in the [Event message include] field.

● **Notification Settings**

Send Email if this event occurs:

Select check box to send an e-mail alert when the event occurs.

Include image from camera:

Select check box to include an image, recorded at the time the event is triggered, in the e-mail alert, then select the required camera in the list below the check box.

Note

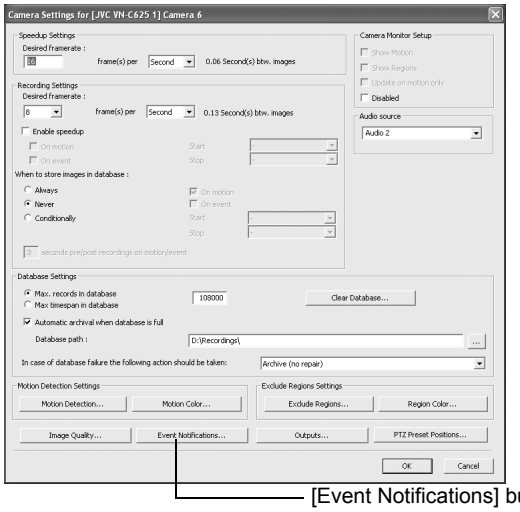
- To define a timer event for a generic event, select the required event that was added in step ***2***, then click the [Add new event] button.

Event Notification Settings

You can select events for triggering event notifications and use yellow, red and green indicators for events in the [Live Viewing] window. The yellow indicator lights up when the specified event has occurred, the red indicator lights up when motion has been detected and the green indicator is used for indicating that images are being received from a camera.

1 Select a camera in the [Camera Record Setting] window, then click [Settings].

A dialog box will appear.

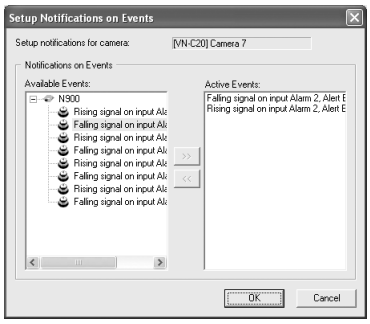


[Event Notifications] button

[Camera Settings] window

2 Click the [Event Notifications] button.

3 Select events for triggering event notifications from the [Available Events] list.



[Setup Notifications on Events] window

4 Click the [>>] button.

The selected event will be copied to the [Active Events:] list.

5 Repeat steps *2* to *4* for each event.

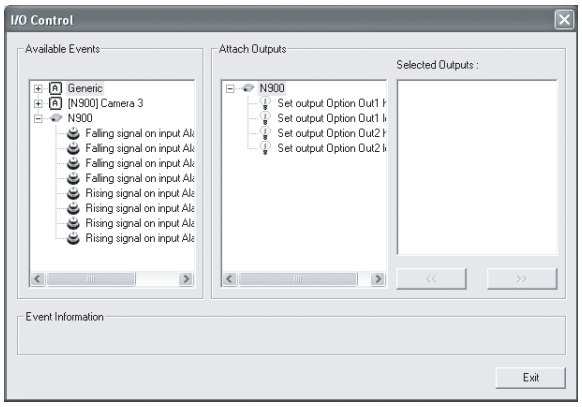
To remove an event for which notification has been set up, select the event and click the [<<] button.

Specifying an Output Port

A specific event or the clicking of an event button can be associated with a particular output port.
To do this, specify the output port from which output will be triggered when a specific event or manual action occurs.

1 Select [I/O Control] in the [Camera Record Setting] window.

A dialog box will appear.



[I/O Control] window

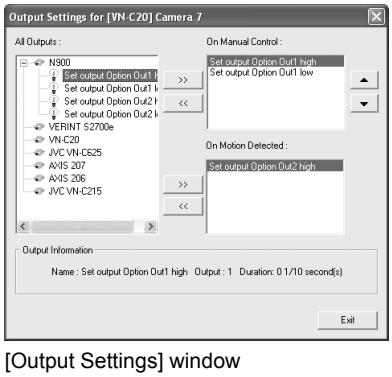
2 Select the required event from the list in the left side of the window.

3 Select the required output and click the [>>] button located below the [Selected Outputs] list.

To remove an output from the [Selected Outputs] list, select the required output, and click the [<<] button.

Output Settings for Cameras

You are able to associate a camera with particular external outputs, defined in the [I/O Setup] window, for example the sounding of a siren or the switching on of lights.
The associated outputs can be triggered automatically when motion is detected as well as manually through output buttons.
You access the [Output Settings] window from the [Camera Settings] window (☞ Page 28), by clicking the [Outputs] button.



[Output Settings] window

● **Selecting Output for Manual Control**

You are able to specify outputs to be triggered manually through output button or from a list in the [Live Viewing] window.

1 Select the required output in the [All Outputs] list.

2 Click the [>>] button located between the [All Outputs] list and the [On Manual Control] list.

- This will copy the selected output to the [On Manual Control] list.
- You are able to move a selected output up or down in the [On Manual Control] list with the up and down buttons located to the right of the list.
- To remove an output from the [On Manual Control] list, select the required output, and click the [<<] button located between the [All Outputs] list and the [On Manual Control] list.

● **Selecting Output for Use on Motion Detection**

You are able to select outputs to be triggered automatically when motion is detected in images from the camera.

1 Select the required output in the [All Outputs] list.

2 Click the [>>] button located between the [All Outputs] list and the [On Motion Detected] list.

- This will copy the selected output to the [On Motion Detected] list.
- To remove an output from the [On Motion Detected] list, select the required output, and click the [<<] button located between the [All Outputs] list and the [On Motion Detected] list.

Motion Detection Settings

You can configure the camera's motion detection.

You can specify when images from the camera are transferred, when alerts are generated and when external outputs (the switching on of the lights or the sounding of a siren) are triggered.

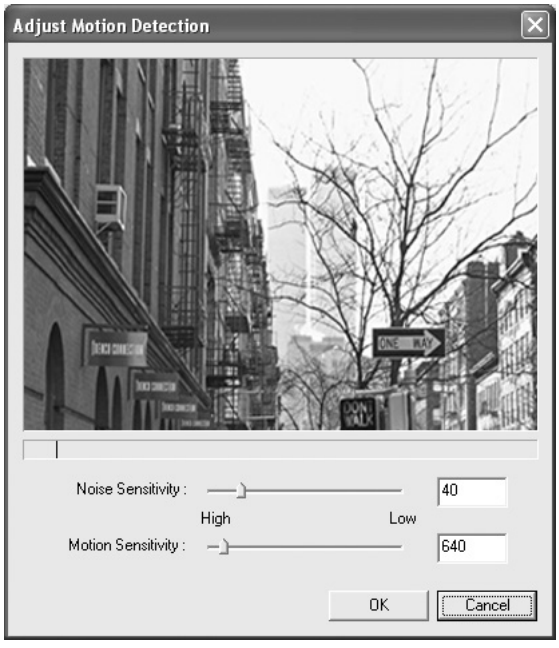
CAUTION

- Motion detection is a key element in system operation, and time spent on finding the best possible motion detection settings for each camera may help you later avoid unnecessary alerts. Depending on the physical location of the camera, it may be necessary to test and adjust the motion detection settings under different physical conditions (day/night, windy/calm weather, etc.).

1 Select the required camera from the [Camera Record Setting] window in the [Device Manager] section and click the [Motion Detection] button in the [Camera Settings] window to open the [Adjust Motion Detection] window.

2 Adjust the sensitivity and threshold value.

- The [Noise Sensitivity] slider determines how much each pixel must change before it is regarded as motion. With a high noise sensitivity, very little change in a pixel is required before it is regarded as motion. Areas in which motion is detected when compared with the previous image are highlighted (by default, in green).



[Adjust Motion Detection] window

- The [Motion Sensitivity] slider determines how many pixels must change in the image before it is regarded as motion. When the slider is moved from side to side, the black vertical line below the image moves and the threshold is adjusted. When detected motion is above the selected sensitivity level, the bar changes color from green to red, indicating a positive detection.

3 Define the areas in which motion detection is disabled.

CAUTION

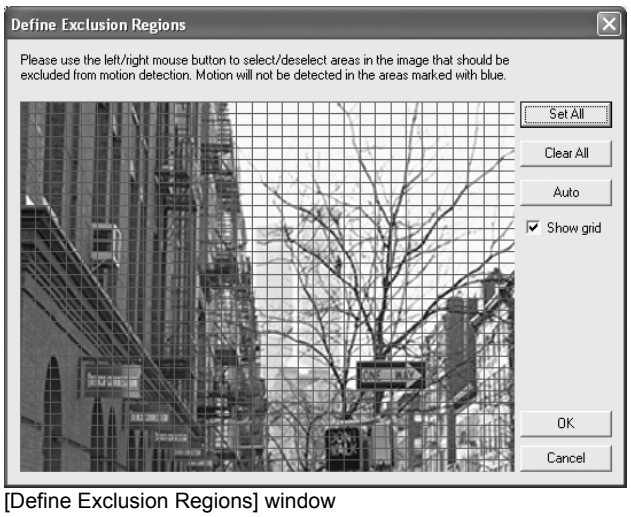
- Before adjusting motion detection, it is recommended that you specify image resolution and compression-related settings and define the motion detection exclusion areas. Otherwise, if you adjust the image quality or define the exclusion areas later, it may be necessary to readjust the sensitivity according to the motion detection settings.

Defining Exclusion Regions

Disabling motion in specific areas of a camera's images may help avoid detection of irrelevant motion, for example if the camera covers an area where a tree is swaying in the wind or where cars regularly pass by in the background.

1 Select the required camera in the [Camera Record Setting] window's [Device Manager] section, then click [Exclude Regions] in the [Camera Settings] window.

When the [Show grid] check box is selected, the preview image is divided into small sections by a grid. Areas highlighted in blue indicate the exclusion areas.



[Define Exclusion Regions] window

2 Left click and drag the mouse pointer over the grid sections in the preview image to select the areas in which motion detection will be disabled.

Selected areas are highlighted in blue.
To clear areas in which motion detection has been disabled, right click and drag the mouse pointer over the required grid sections.

Buttons and Check Boxes

Set All:

Lets you quickly select all grid sections in the preview image.

Clear All:

Lets you quickly clear all grid sections in the preview image.

Auto:

By clicking the [Auto] button, the system will automatically detect areas with noise (insignificant changes in individual pixels which should not be regarded as motion) in the image, and automatically mark such areas as areas in which motion detection should be disabled. As the automatic detection is based on an analysis of a number of images, it may take a few seconds from after you click the [Auto] button until noisy areas are detected and marked.

Show grid:

With the [Show grid] check box selected, the preview image contains a grid indicating the division of the preview image into selectable sections. By default, the [Show grid] check box is selected.

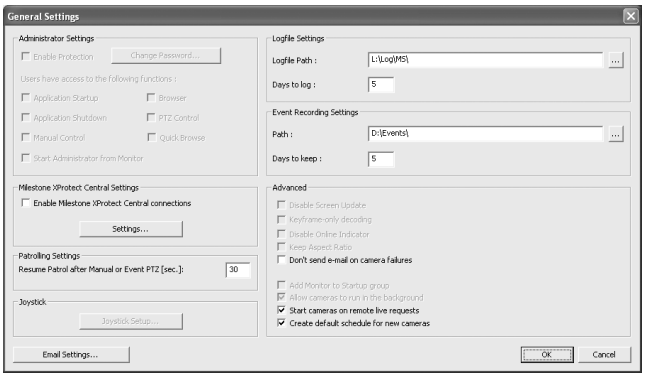
CAUTION

- When the motion detection is set at short intervals, note that the number of alarm will increase and reach to the point where time is required to search for playback.
- When the camera is connected, malfunction of the motion detection may occur due to the flickers of fluorescent lamps, etc. In this case, set the camera to the flicker less.
- When there are a lot of noise included in camera image, there may be a false detection. Set the camera not to false detect, even when the ACG of the camera at nighttime, etc. is operating.

Other Settings

General Settings

The [General Settings] window lets you manage a number of settings such as e-mail settings, etc. To access the [General Settings] window, click the [General Settings] button in the [Camera Record Setting] window.



[General Settings] window

● **Milestone XProtect Central Settings Section**

Settings for using Milestone XProtect Central made by Milestone Systems. For detailed information, please refer to Central 3.1 Administrator's Manual.
(http://milestonesys.com/?cid=265)

● **[Patrolling Settings] Section**

Specify the settings in this section when using PTZ cameras for which patrolling has been set up. (☞Page 45)

● **[Event Recording Settings]**

Do not change these settings.

● **[Advanced Settings] Section**

Don't send e-mail on camera failures:

If selected, no e-mail alerts will be sent if contact is lost with a camera.

Start cameras on remote live request:

You are able to view live images from cameras even though the cameras in question are offline.

When a live image of VR-N900 Viewer is displayed, the camera automatically changes to online and records the image according to the recording settings.

CAUTION

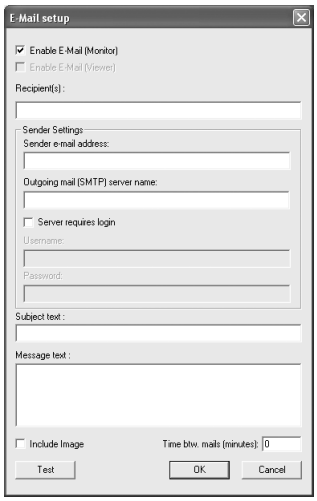
- The cameras will be online when [Start cameras on remote live request] is set and live images are displayed. The display of live images in the recording control mode combined with certain settings may start recording. This is also the case when live images appear on a surveillance computer.

Create default schedule for new cameras:

If selected, a schedule specifying that the camera is always online will automatically be created in the [Camera/Alert Scheduler] window.

● **[Email Settings]**

This lets you enable and configure the use of e-mail alerts.



[E-Mail setup] window

The following items can be specified.

Enable E-Mail (Monitor):

Select the check box to enable use of e-mail alerts.

Recipient(s):

Specify e-mail addresses to which alerts should be sent. If specifying more than one e-mail address, separate e-mail addresses with semicolons.

Sender settings:

Specify the sender's e-mail address, outgoing (SMTP) mail server name and login settings.

Subject text:

Specify the required subject text.

Message text:

Specify the required message text.

Include Image:

Select the check box to include images in e-mail alerts.

Time btw. mails (minutes):

Specify the required time (in minutes) between the sending of each e-mail alert.

Note

- You are able to send a test e-mail by clicking the [Test] button. When the mail address of the sender is unregistered to the destination mail server, [The email address of the sender is not valid. ....] will be displayed. Confirm the e-mail address and SMTP server, and then re-enter the e-mail address.
- E-mail messages are sent when:
  - An input event occurs. (Refer to "Specify an input event". ☞ Page 47)
  - An event button is clicked. (Refer to "Configuring Event Buttons". ☞ Page 50)
  - A generic event occurs (Refer to "Specifying Generic Buttons". ☞ Page 51)
  - When motion is detected, (Motion Detection Settings ☞ Page 54)
  - A camera failure occurs. (Refer to "General Settings". ☞ Page 55)
  - An archive error occurs. (Refer to "Archiving". ☞ Page 57)

  To send e-mail, make the settings described in "Specifying a Scheduler" (☞ Page 26) to specify periods for sending e-mail messages.

  When setting the E-mail, test and verify that the E-mail is sent.

Database Settings

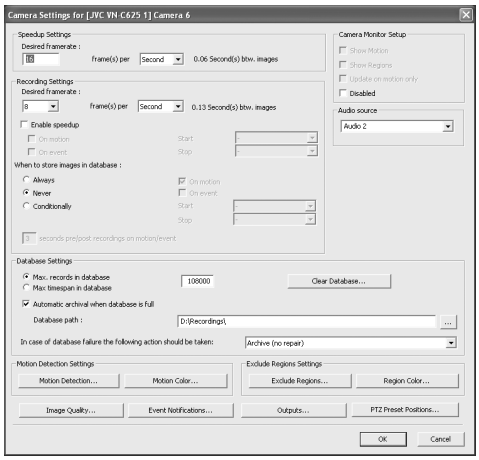
Let you specify the database settings.

Note

- In this manual, recorded image data is referred to as the database.
- The recorded images are saved as database.

1 **Select [Camera Record Setting] in the Main Menu.**

2 **Select the required camera in the [Device Manager] section and click the [Camera Settings] button.**



3 **Specify the [Database Settings].**

Max. records in database:

Select this option to limit the database size based on a maximum allowed number of records in the database. Specify required maximum number of records in the neighboring field.

If [Automatic archive when database is full] is turned off and when the maximum number of records in the database is reached, the oldest record in the database will be automatically overwritten.

Max. time span in database:

Select this option to limit the database size based on a total recording time in the database. Specify required total recording time in the neighboring field, and select required unit (Minutes, Hours, or Days) from the list.

If [Automatic archive when database is full] is turned off and when the total recording time in the database is reached, the oldest record in the database will automatically be overwritten.

Automatic archive when database is full:

This setting automatically archives data when the database becomes full.

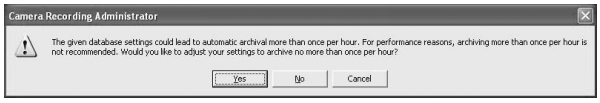
When the capacity of the hard disk decreases, the oldest archive will be deleted.

Database path:

Do not change this setting.

Note

- The database can store up to 600,000 records.
- The default size for the database is 108,000 records. Do not change this setting as it may reduce the recording time and lower the recording performance.
- When using archiving (☞ Page 57), it is possible to store images beyond the capabilities of the camera's database.
- Depending on the settings, the following window may appear. In this case, click [No].



In case of database failure the following action should be taken:

Select which action to take if the database becomes corrupted. The number of available actions depends on whether archiving has been enabled. (☞ Page 57)

Normally, select [Archive (No repair)]. Any other selection may in the event of a problem even result in the deletion of the database.

Repair, Scan, Delete if fails:

Two different repair methods will be attempted: a quick repair and a complete repair. If both repair methods fail, the contents of the database will be deleted.

Repair, Delete if fails:

A fast repair will be attempted. If the fast repair fails, the contents of the database will be deleted.

Repair, Archive if fails:

Available only if archiving is enabled for the camera. A fast repair will be attempted. If the fast repair fails, the contents of the database will be archived. This action is recommended if archiving is enabled for the camera.

Delete (no repair):

Do not select this item.

Archive (no repair):

Available only if archiving is enable for the camera. The contents of the database will be archived.

CAUTION

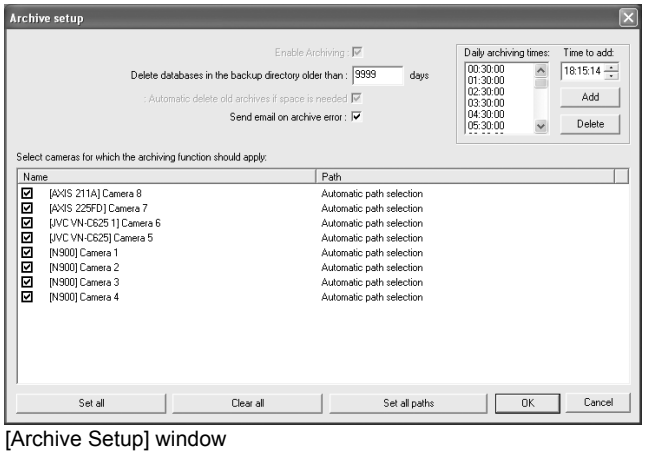
- Recommended setting when an UPS is not used. The largest time span in the database is selected, it is recommended to set it as 60 minutes.

Archiving

With the archiving feature, you are able to keep recordings for as long as required, limited only by the available hard disk storage capacity. By default, images received from cameras are stored in a database for each camera. The database for each camera which is configured in Database Settings (click the [Camera Record Setting] → [Device Manager] → [Camera Name] → [Camera Settings] window) is capable of containing a maximum of 600,000 frames or 40 GB and the oldest records in the database are overwritten. With daily archiving, the amount of records you are able to store is limited only by the available hard disk storage capacity.

- You can specify how many times a day the contents of the camera database will be moved to the archiving directory.
- The archiving location for each camera is automatically selected. Automatically selects a hard disk drive with a larger amount of free space.
- You are able to use the browsing features for archived images; just like you would with recordings stored in a camera's regular database.

1 Click the [Archive Setup] button in the [Camera Record Setting] window.



[Archive Setup] window

2 In "Delete databases in the backup directory older than:", specify how many days you want to keep archived images.

3 Use the [Add] and [Delete] buttons to add or remove an archiving time in the Daily archiving times list.

4 Select the required cameras for which the archiving function should apply.

CAUTION

- Recorded images may be lost in the recording performed while archiving.

Note

- If audio is enabled while recording, audio data from the device will also be archived.

● **Fields, checkboxes and buttons**

Enable Archiving:
This function is not available.

Delete databases in the backup directory older than:
Lets you specify how many days you want to keep archived images.

Automatic delete old archives if space is needed:
This function is not available.

Send email on archive error:
Select this check box to send an e-mail alert if archiving fails.
Recording may be disrupted for at most 1 second during start of archiving.

Daily archiving times:
Lists specified archiving times. Archiving will take place every day at the specified time.

Time to add:
Specify the archiving time.

Add:
Adds the archiving time specified in the [Time to add] field to the [Daily archiving times] list.

Delete:
Removes a selected archiving time from the [Daily archiving times] list.

Select cameras for which the archiving function should apply:
If the [Enable Archiving] check box is selected, this section lists cameras for which archiving is possible.
To specify that archiving should apply for a specific camera, select the check box next to the name of the required camera.

Set all:
Selects the check boxes for all cameras.

Clear all:
Clears the check boxes for all cameras.

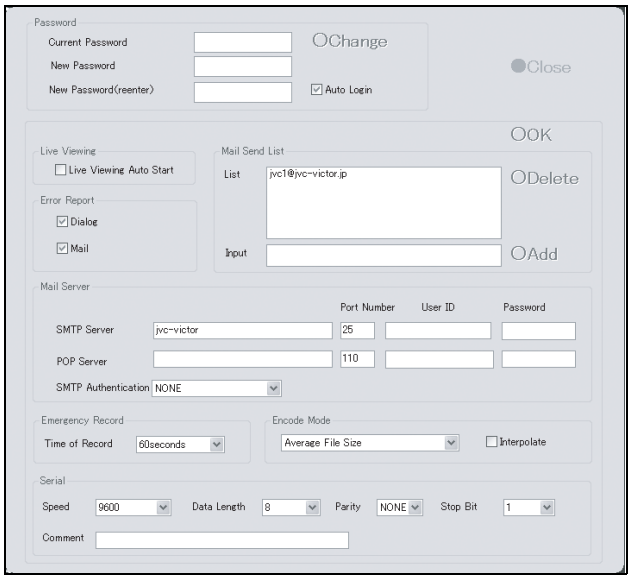
Set all paths:
This button is enabled.

CAUTION

- When other operations (i.e. startup of Live Viewing, etc.) overlap with the startup of the archive process, up to 3 seconds of the recording may be lost.

Unit Setting

Unit Setting lets you specify account configuration, error recovery, serial port and other VR-N900U-related settings.



[Unit Setting] window

1 Select [Unit Setting] in the Main Menu.

This will open the [Unit Setting] window. You can set the following items.

[Password]

To edit the VR-N900U login password, enter the current password, then enter the new password in the [New Password] field. Enter the new password once again for confirmation purposes. Click the [Change] button to enable the settings.

Note

- To log in automatically when the VR-N900U is switched on, select the [Auto Login] check box.

[Live Viewing Auto start]

Select the [Live Viewing Auto Start] check box, live images are automatically displayed when the system is started.

[Error Report]

Lets you select how you want to be notified if an error is detected in the system. If you select [Dialog], an error message will be displayed in the window. If you select [Mail], an e-mail will be sent to the preset e-mail address to alert the abnormality.
For details on errors and measures to be taken when warning LEDs go on, refer to the instructions in “Troubleshooting” in the startup guide.

[Mail Send List]

Lets you specify the e-mail address if you selected [Mail] for the [Error Report]. To add an e-mail address, type the e-mail address in the entry field and click the [Add] button. To remove an e-mail address, select the required e-mail address in the address list and click the [Delete] button.

[Mail Server]

Lets you define the necessary information regarding the mail server if you selected [Mail] for the [Error Report].

- SMTP server is the server to be used for sending e-mails.
- POP server is the server to be used for receiving e-mails.
- Lets you select the method for authenticating users when sending e-mail through the mail server. You can choose from SMTP Authentication, POP before SMTP and NONE. Consult your system administrator if in doubt.

[Emergency Record]

Select the emergency recording duration to start recording in all channels when a signal is input to the EMERGENCY terminal on the rear panel. If you select [Continuous], recording continues until stopped manually on the front panel.

[Encode Mode]

Lets you select the encoding mode for converting analog image data into digital data. You can choose from the following three modes.

Specify the encoding size control method and target file size when encoding JPEG files.

- **[Variable File Size]:**
  The file size increases or decreases depending on the image. Specify this to maintain the constant image quality.
  * Note that maximum recording time varies when recording JPEG files with this option as the file size increases or decreases.
- **[Average File Size]:**
  Multiple JPEG files are encoded to reach the designated size as average size.
- **[Constant File Size]:**
  Each JPEG file is encoded to reach the designated size. Since the processing load is heavy with the Constant File Size, which decreases the maximum processing frame rate by approximately one quarter of the average frame rate speed.
  * You can specify the file size from the [Image Quality] bar in the [Device Settings] (☞Page 28) on the [Camera Record Setting] window.

Note

- If the comb-like noise (jagged noise) which occurs on the edge of moving objects annoys you, select the required encoding mode, then select the check box next to [Interpolate].

[Serial]

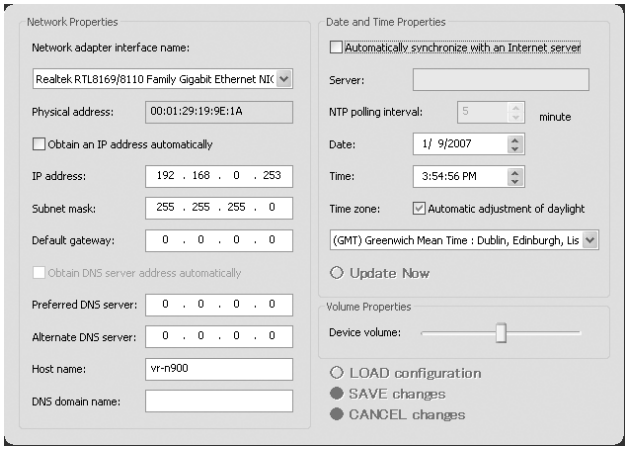
Lets you specify the settings for the serial ports controlling the cameras. For details of the settings, refer to the user manual for the cameras.

OS Setting

You are able to specify the network settings, time settings, volume settings and other OS-related settings.

Note

- You may need to reboot your computer depending on the settings.



[OS Setting] window

1 Select [OS Setting] in the Main Menu.

This will open the [OS Setting] window. You can set the following items.

- **Network Properties**

Enter the VR-N900U IP addresses. The recorder provides IP address fields for the camera network, intranet and analog camera network. The default settings are 192.168.0.253, 192.168.1.253 and 192.168.201.253, respectively.

When specifying LAN1 (camera network) settings

Select [Realtek RTL8169/8110 Family Gigabit Ethernet NIC] in the [Network adapter interface name] field, then specify the address.

When specifying LAN2 (intranet) settings

Select [Intel(R)8255xER PCI Adapter] in the [Network adapter interface name] field, then specify the address.

When specifying analog camera network settings

Select [Enc Board Driver] in the [Network adapter interface name] field, then specify address.

In the VR-N900U, analog input circuitry is considered an network encoder (IP video server) and has the IP address 192.168.201.12. The analog camera network IP address of the VR-N900U is 192.168.201.253 by default. Do not change these addresses as the recorder may not function properly.

Note

- If you are unsure of the IP address, consult your system administrator.

CAUTION

- Do not change the analog camera network settings unless absolutely necessary. If changes are unavoidable, consult your nearest JVC dealer.
- When a host name is modified, it is necessary to “Add the Windows user” with the [User Administration] of the [Image Server Setting]. (☞ Page 64)
- Do not set the default gateway in each of the camera network and intranet in the [OS Setting] window. The operation may not function properly.

● **Date and Time Properties**

To synchronize the time with the internet time server or to specify the date and time manually, click [Update Now].

Automatically synchronize with an Internet server:

Select the check box to synchronize the time with the internet time server.

CAUTION

- [Date and Time Properties] are not set unless the [Update Now] button is clicked.
- Changing the time setting may prevent normal playback of simultaneously made recordings.

Note

- When selected, you cannot specify the date and time manually. The entries in the boxes cannot be changed.

NTP polling interval:

Specify the required time (in minutes) between each synchronization with the internet time server.

Date:

Enter the date when specifying the date manually.

Time:

Enter the time when specifying the time manually.

Time zone:

Specify the time zone.

Auto adjustment of the Daylight Saving Time:

You may setup and use the Daylight Saving Time (DST) depending on the time zone of the area you are in.

CAUTION

- Please do not set any duplicate date and time of any previous recorded data which may overlap.

Note

- If the time is synchronized with the internet time server but the specified time zone is incorrect, the system will not run at the correct time.

● **Volume Properties**

Adjust the volume using the slider bar.

● **LOAD configuration**

The preset configuration files are read and displayed on the screen.

● **SAVE changes**

Inputs and selected content are configured to the system.

Note

- The date and time will not be updated manually when [SAVE changes] is clicked. To update the date and time manually, go to the [Date and Time Properties] section.

● **CANCEL changes**

All inputs and selected settings are ignored.

Flash Memory Utility

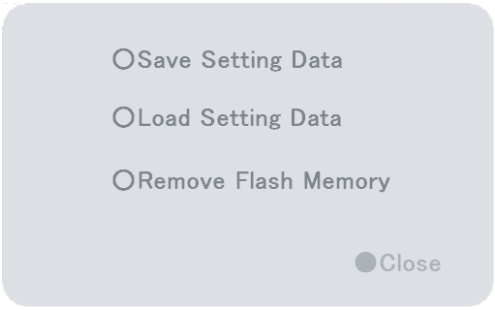
You can save and restore set values to the flash memory.

Note

- Items specified in [Screen Setup], [Camera Record Setting] and [Image Server Setting] in the Main Menu will not be saved.

1 Select the [Flash Memory Utility] of the Main Menu.

The [Flash Memory Utility] window is displayed.



[Flash Memory Utility] window

●[Save Setting Data]

This lets you save the settings data to the flash memory.

1 Insert the flash memory into the SERIAL port on the front or rear panel.

2 Select [Save Setting Data].

- You will be asked to confirm that you want to save the settings data.
- A message informing you that the flash memory cannot be detected may be displayed. If this happens, wait approximately 30 seconds, then select [Save Setting Data] again.

3 Click the [OK] button.

- The settings data will be saved.
- When saving is finished, a message informing you that the data has been saved will be displayed. Click the [OK] button again.

4 Select [Remove Flash Memory].

- You will be asked to confirm that you want to remove the flash memory. Click the [OK] button.
- A message informing you that the flash memory has been removed will be displayed. Click the [OK] button.

5 Remove the flash memory from the SERIAL port on the front or rear panel.

Note

- Settings data is saved to the VR-N900 folder in the flash memory (USB memory).
- If you want to save additional settings data after selecting [Remove Flash Memory], remove the flash memory from the serial port, then insert it again. When the flash memory is inserted, it will be automatically detected.

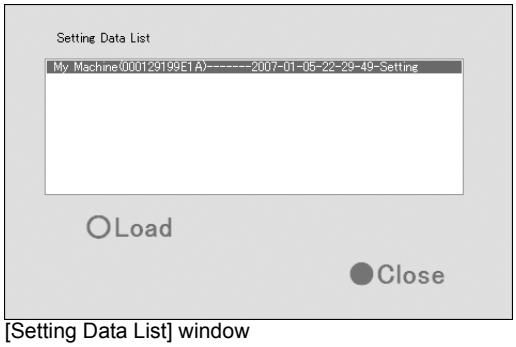
●[Load Setting Data]

This lets you read settings data from the flash memory.

1 Insert the flash memory into the SERIAL port on the front or rear panel.

2 Select [Load Setting Data].

- If data has been saved to the flash memory, a list of the data that has been saved will be displayed in the settings data list.
- A message informing you that the flash memory cannot be detected may be displayed. If this happens, wait approximately 30 seconds, then select [Load Setting Data] again.
- Settings data that has been saved on this VR-N900U will be preceded by My Machine. If the data was saved on another VR-N900U, it will be preceded by Other Machine. This will be followed in parenthesis by the MAC address of the VR-N900U at the time the data was saved. This in turn will be followed by the date/time when the data was saved in the form [yyyy – mm – dd – sec – Setting].
- If several data are displayed, highlight the data in the list that you want to read.

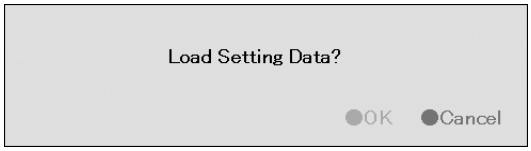


[Setting Data List] window

3 Select [Load], then click the [ZOOM IN/ENTER] button on the front panel.

The highlighted data will be read.

4 You will be asked to confirm that you want to read the settings data. Click the [OK] button.



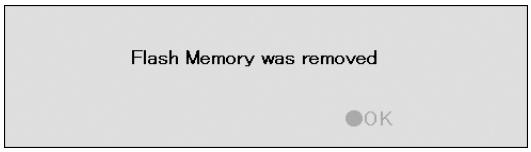
- The settings data will be read.
- When reading is finished, a message informing you that the data has been read will be displayed. Click the [OK] button again.

5 Click the [Close] button. You will be returned to the [Flash Memory Utility] window.

6 Select [Remove Flash Memory].

- You will be asked to confirm that you want to remove the flash memory. Click the [OK] button.

- A message informing you that the flash memory has been removed will be displayed. Click the [OK] button.



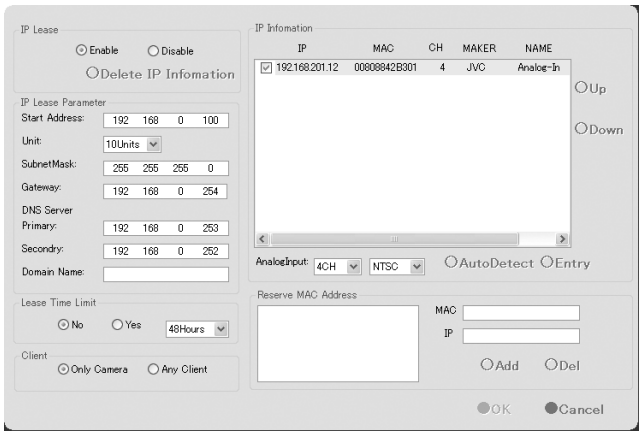
7 Remove the flash memory from the SERIAL port on the front or rear panel.

Note

- Items specified in [Screen Setup], [Camera Record Setting] and [Image Server Setting] in the Main Menu will not be read.
- If you want to read additional settings data after selecting Remove flash memory, remove the flash memory from the serial port, then insert it again. When the flash memory is inserted, it will be automatically detected.

Auto Detect Setting

You can assign an IP address to each camera and configure various settings concerning auto detect settings.



[Auto Detect Setting] window

●IP Lease

Use this function to assign IP addresses to each network camera.

CAUTION

- In order to allocate the IP address of the network camera with the IP lease function, it is necessary to enable the DHCP of the network camera. To enable the DHCP of the network camera, refer to the instruction manual of the network camera.

1 Select [Auto Detect Setting] from the Main Menu.

The [Auto Detect Setting] window appears.

2 Select [Enable] for [IP Lease].

In an environment using multiple VR-N900U video recorders, enable [IP Lease] only for one recorder. Select [Disable] if a DHCP server is operating on the same network. When more than 2 devices are enabled to the [IP lease function] simultaneously, the cameras may malfunction or the IP address may change to a static IP address.

3 Make the required entries in the IP Lease parameter fields.

[Start Address]

Specify the first of the IP addresses to be assigned to the cameras.

[Unit]

Select the number of IP addresses to be assigned to the cameras. The selected number of IP addresses will be assigned starting from the first IP address.

[Subnet Mask]

Specify the subnet mask for the camera(s).

[Gateway]

Specify the gateway for the camera(s).

[DNS Server]

Specify the DNS server address for the camera(s).

[Domain Name]

Specify the domain name for the camera(s).

[Lease Time Limit]

Specify the validity period of the IP address assigned to the camera(s). If [Yes] is selected, you can set the lease time on an hourly basis.

[Client]

You can select whether to apply restrictions when assigning the IP address. If [Only Camera] is selected, an IP address will be assigned only to the camera. If [Any Client] is selected, the IP address will be assigned to all the cameras.

[Reserve MAC Settings]

Use [Reserve MAC Address] when you want to specify an IP address for the cameras. An IP address is always mapped to a MAC address. Enter a value in the MAC and IP fields and click [Add] to set the addresses. Selecting a displayed MAC and IP address and clicking [Del] will delete this setting.

4 Click the [OK] button.

This closes the setup window and starts the assignment of IP addresses.

Select [Disable] in step *2* to stop IP address assignment.

● **Using the Auto Detect function**

Automatically detects the corresponding network camera.

For details on the auto detect setting, refer to [Automatically Registering the Cameras] in the startup guide.

- When multicast packets are not set to pass through the network equipment(s) such as a switching HUB, the Auto Detect of the camera, etc. may not operate properly.
- The [IP Information] list shows the automatically detected camera IP address, MAC address, number of video channels, maker name and model name. Click [Auto Detect] to start auto detect and display the result. The camera at the top of the list has priority. Click [Up] and [Down] to change the order of priority. Deselect any camera you are not going to use. [Analog-Input] is the built-in analog input for the VR-N900U whose channels have priority.

Click the [OK] button to open the [Camera Record Setting] window. Clicking [Close] automatically creates a Default View. To save this view, change its name.

Note

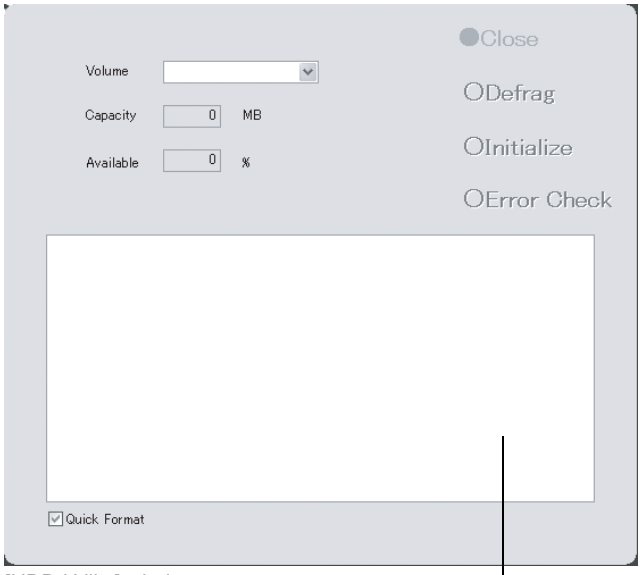
- The Default View created by the Auto Detect Setting may change camera placement in the view. To maintain a specific placement, assign a name to the view and save it.

CAUTION

- Deselecting [Analog Input] disables the [ALARM IN 1 to 4] signal input terminals on the rear panel.
- When operating the auto detect function and “Do not detect in the future.” is selected in the [Detecting Device] window, the [Detecting Device] window of the corresponding camera will not be displayed with subsequent auto detect operation, but even with the camera which is out of the detection can be added (☞ Page 40) manually.

HDD Utility

This feature lets you format, defragment and check the status of the hard disk.



[HDD Utility] window

[Progress indicator]

The [Progress indicator] shows the progress of formatting and defragmentation.

1 Select [HDD Utility] in the Main Menu.

This will open the [HDD Utility] window. You can set the following items.

[Volume]

Click the arrow at the right of the volume field to select the required hard disk. When you have selected a hard disk, the capacity and free space will be displayed in the fields below the selected volume.

[Defrag]

Clicking this button executes defragging to resolve file fragmentation in the volume selected in the volume field. Defragging may take several hours depending on the status of the hard disk. If defragging cannot be executed for some reason, a message to that effect will be displayed. Click the [Close] button to close the dialog.

[Initialize]

Clicking this button executes formatting of the hard disk in respect of the volume selected in the volume field. All data contained in the volume will be erased when formatting is executed. You will be asked to confirm whether you want to format the hard disk. If you selected an unformatted disk, the message [unformat disk] or [unpartition disk] will be displayed.

Click the [OK] button to format the disk. To cancel formatting, click the [Cancel] button. If formatting cannot be executed for some reason, a message to that effect will be displayed. Click the [OK] or [Cancel] button to close the dialog.

Normally, the hard disk is formatted prior to shipping, but occasionally an unformatted hard disk may be found. If this happens, the message [unformat disk] will be displayed in the volume field. To format an unformatted disk, select [unformat disk], then click the [Format] button.

CAUTION

- Volume C, D and L cannot be formatted.

[Error Check]

This button is not normally selected. Use it only if you suspect that there is some abnormality in the hard disk or if you want to check the data structure of the disk. Recovery of large-capacity hard disks may take several hours. Recovery of the hard disk in the system is impossible. Recovery will be executed the next time the system is started.

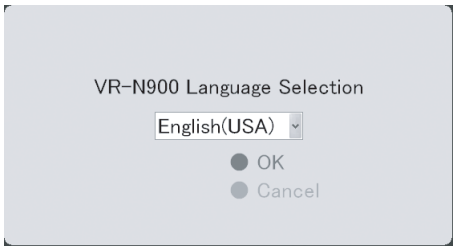
Recovery may not be possible when the recovery volume is being used. If this happens, a message will be displayed informing the user that recovery cannot be performed at the present time and asking whether recovery should be scheduled for the next time the system is started. Select whether to click the [Cancel] button and then to retry by clicking the Recover button again, or whether to click the [OK] button to execute recovery the next time the system is started.

Language Setting

Let you specify the language you want to use.
The function of the button and the GUI (graphical user interface) are the same as the [Language Selection] window that is displayed when the recorder is first switched on.
When setting the language, shut down the VR-N900 Viewer.

1 Select [Language Setting] in the Main Menu.

- The [VR-N900 Language Selection] window is displayed when the VR-N900U is switched on for the first time. Click the [▼] button and select the language you want to use in the [VR-N900 Language Selection].
- Click the [OK] button to enable your choice. The system will reboot when the language setting is changed.
- Click the [Cancel] button to cancel.



[VR-N900 Language Selection] window

CAUTION

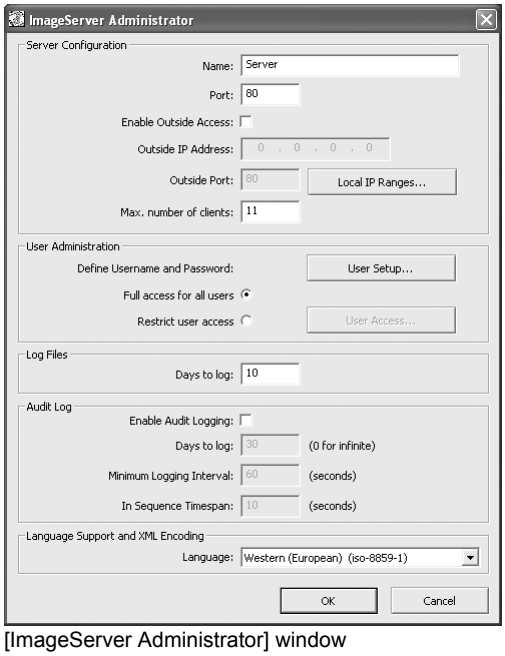
- As for language setting, immediately set the language after the VR-N900U startup.
- When language setting is finished, the device automatically reboots. Approximately 5 minutes is required to finish.
- Set the language after shutting down the Viewer.
- Never turn off the power while setting the language.

Image Server Setting

Lets you specify settings for connecting the VR-N900U to a computer and for displaying the [Live Viewing] window and [Browse] window.

CAUTION

- The Image Server settings apply to operations in the [Live Viewing] window, [Browse] window and [Screen Setup] window on the VR-N900U.



[ImageServer Administrator] window

1 Select [Image Server Setting] in the Main Menu.

This will open the [ImageServer Administrator] window.
The [ImageServer Administrator] window is divided into five sections.

● **Server Configuration Section**
This section is used for specifying the server name and port and for enabling optional external access to the server.

Name:
Lets you specify a name for the server. By default, the name is simply [Server].

Port:
Lets you specify a port number to use for the server.

Enable Outside Access:
Select this check box to enable access to the VR-N900U from a surveillance computer connected to the internet via router or firewall.
If this option is selected, specify the global IP address in the [IP address] column of the router or firewall for Internet, then specify the port number in the [Port] column to have the surveillance computer access to the internet.

CAUTION

- You have to set up port forwarding and provide a path via routers and firewalls to allow a surveillance computer connected to the Internet to access the system. For details, refer to the manuals supplied with the equipment.

Outside IP Address:

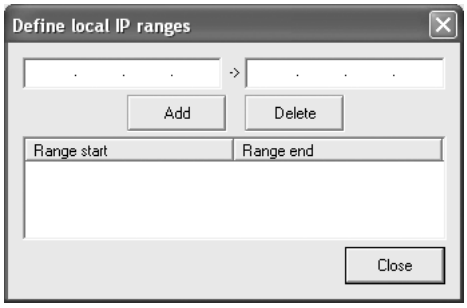
Lets you specify a public IP address for use when the server should be available from the internet.

Outside Port:

Lets you specify a port number to use when the server is available from the internet.

Local IP address Restrictions:

This setting is for the Master/Slave function of the Milestone Systems. For details, refer to the Enterprise 6.0 Administrator's Manual provided by Milestone Systems. (http://milestonesys.com/?cid=265)



Specify the beginning of the IP address range in the window's first field, and the end of the IP address range in the second field. Click the [Add] button.

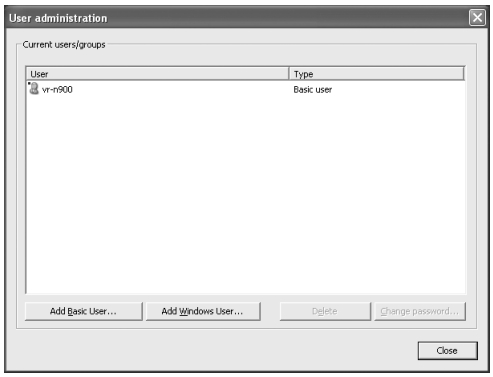
Note

- You may define as many local IP address ranges as required. If required, an IP address range may include only one IP address (example: 192.168.10.1-192.168.10.1).

Max. number of clients:

You are able to limit the number of VR-N900 Viewer users allowed to connect at the same time.

This includes the number of users that access the VR-N900 Viewer [Browse] window and the [Live Viewing] window of the VR-N900U. Do not set a number of clients larger than 11.



● **User Administration Section**

Accounts and rights for users are configured in this section.

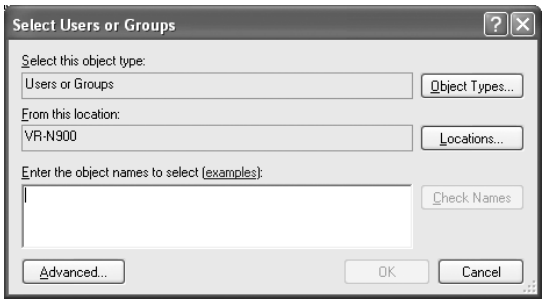
User Setup:

Opens the [User administration] window, in which you define individual users and their passwords. You are able to add new users in two ways:

Basic User:

Lets you create a dedicated surveillance system user account with simple user name and password authentication for each individual user.

Windows User:



Do not select this option normally. Consult your system administrator.

When the host name is modified with [OS setting], please enter "Administrator" in the [Enter the selected object name] of the [Select user or group] window and click the [Check Names] button. And then, click the [OK] button.

Note

- To edit an existing user name or password, select the required user in the [Current users/groups] list, and click the [Change password] button.
- To remove a user from the [User administration] window's list of users, select the user in the list and click the [Delete] button. When removed from the list, the user will no longer be able to log in with the VR-N900 Viewer.
- When the user is added with [Add new user], small icon of the user is displayed on the top left of the [User administration] window. When the same user name is registered to the [Basic User] and [Windows User], it can be distinguished by this user icon.

Full Access for All Users:

Select this option to give all the users access to all VR-N900 Viewer features and all available cameras.

Restricted Access:

Select this option to use restricted access. Then click the [User Access] button to define access rights for each user.

● **Log Files Section**

This section is for specifying the number of days to keep log files in the [Image Server]'s regular event log. By default, such log files are kept for ten days.

● **Audit Log Section**

Audit log is the logging of client user actions.

Days to log:

Number of days in which audit log files should be kept before they are deleted. Default is 30 days.

Minimum Logging Interval:

Minimum number of seconds between logged events.

In Sequence Times pan:

Maximum number of seconds to pass for viewed images to be considered to be within the same sequence.

● **Language Support and XML Encoding Section**

This section is for selecting one of the available languages. Select a language for use in camera names, user names, passwords, etc. Select the language of your choice.

CAUTION

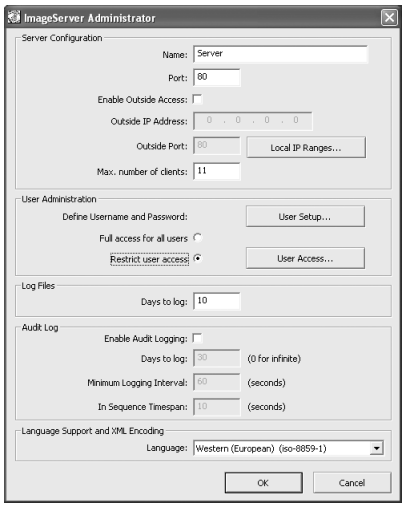
- The default setting of the language is set as Western Europe, always set the language to the area you are at. Failure to heed this caution may cause a malfunction.

Note

- Log information may be required when dealing with malfunctions.

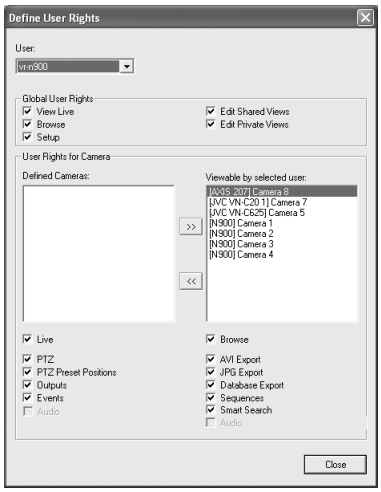
How to Define Rights for Individual Users

1 **Select [Restrict user access] in the [User Administration] section.**



2 **Click the [User Access] button.**

3 **In the User list, select the required user.**



4 **In the [Global User Rights] section, select the user's global (i.e. non-camera-specific) rights.**

[View Live]:

Ability to view live images.

[Browse]:

Ability to search for and browse recorded images.

[Setup]:

Ability to use the Setup tab.

[Edit Shared Views]:

Ability to create and edit shared views.

[Edit Private Views]:

Ability to create and edit private views.

5 **In the [Defined Cameras list], select each camera to which the user should have access.**

6 **Click the [>>] button to move the selected cameras to the [Viewable by selected user] list.**

7 Specify the features for each camera now listed in the [Viewable by selected user] list.

The following features, all selected by default, are available:

Live:
Ability to view live images from the selected camera.

PTZ:
Ability to use the VR-N900 Viewer's navigation features for PTZ cameras.

PTZ Preset Positions:
Ability to use the VR-N900 Viewer's navigation features for moving a PTZ camera to particular preset positions.

Outputs:
Ability to trigger outputs (e.g. switching on lights, sounding sirens), if such outputs are available.

Events:
Ability to use the VR-N900 Viewer's Event Control feature for manually triggering events.

Browse:
Ability to browse recorded images from the selected camera.

AVI Export:
Ability to generate and export evidence as movie clips in the AVI format.

JPG Export:
Ability to generate and export evidence as JPG images.

Database Export:
Ability to generate and export evidence in database format.

Sequences:
Ability to use the Sequences feature for browsing images from a selected camera.

Smart Search:
Ability to use the VR-N900 Viewer's Smart Search feature. (☞ Page 5)

Audio:
Ability to listen to live sound from the selected camera's audio device (available only if camera has audio device attached).

8 Repeat as required for other users.

Note

- It is recommended to limit [Setup] rights to prevent inadvertent changes by system users.

Connecting to a Computer

When connected to a computer, the following operations are possible.

- Viewing live images on the computer
- Controlling network cameras on the computer
- Viewing recorded images on the computer

CAUTION

- Connect the computer to the LAN2 terminal network.
- Settings for cameras connected to the LAN1 network cannot be specified from a computer connected to the LAN2 network.
- When you login into another VR-N900U after logging out from a different VR-N900U, the PTZ operation may not operate normally and the timeline may not be displayed. In this case, exit the VR-N900 Viewer once and reboot the computer.

System requirements

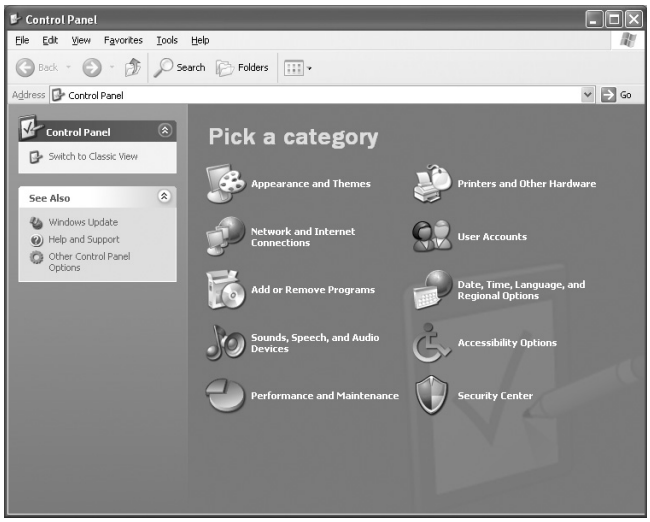
Operating System	Microsoft Windows 2000 Professional, Windows 2000 Server and Advanced Server, Windows XP Professional (32 and 64 bit) or Windows Server 2003 (32 and 64 bit)
CPU	Intel Pentium4 or higher (Xeon recommended for large views), minimum 2.4 GHz
RAM	Minimum 512 MB (1 GB recommended for large views)
Network	Ethernet, 100 Mbit or higher recommended
Graphics Card	AGP or PCI-Express, minimum 1024 × 768 (1280 × 1024 recommended), 16 bit colors or higher
Hard Disk Space	50 MB free
Software	.Net Framework 2.0 and DirectX 9.0 or newer required Microsoft Internet Explorer 6.0 or higher

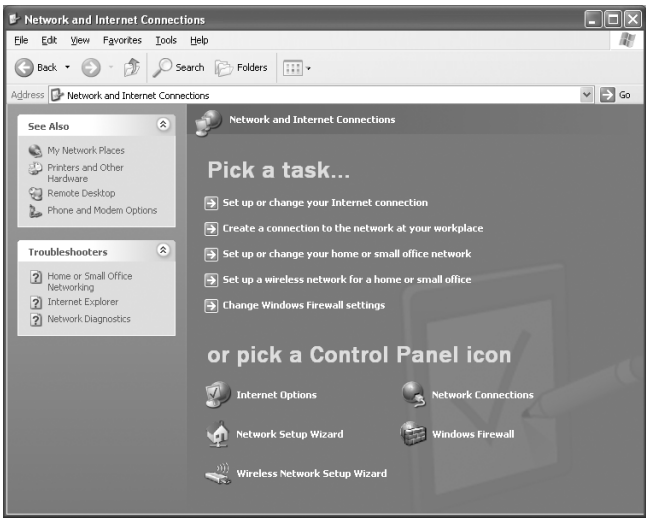
Computer Network Settings

The following example is for building a small-scale LAN using Windows XP professional and the VR-N900U settings at the time of shipment.
(All screens shown below are Windows XP SP2 setup windows.)

1 Click the [Start] button and choose [Control Panel].

2 Under “Pick a Category”, click [Network and Internet Connections] and then under “or pick a Control Panel icon”, click [Network Connections].

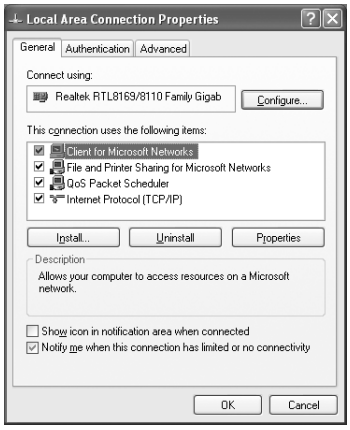




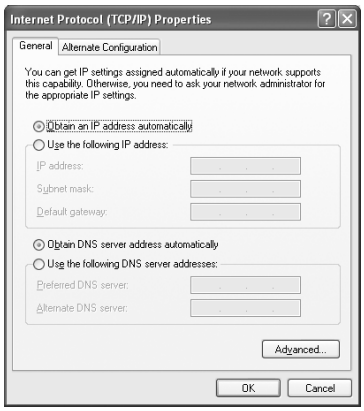
3 Select the network to which the VR-N900U is connected.

4 Right-click and select [Properties].

5 Make sure that the [Microsoft network client] and [Internet protocol (TCP/IP)] check boxes are selected.



6 Select [Internet protocol (TCP/IP)] and click the [Properties] button.

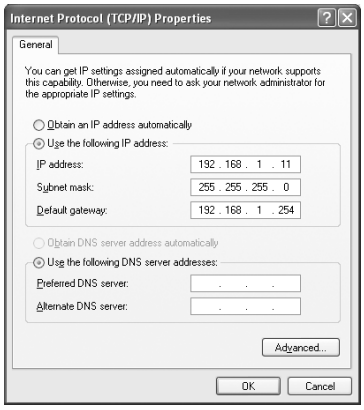


7 **Select [Use next IP address].**

8 **Specify 192.168.1.11 for the IP address.**

9 **Specify 255.255.255.0 for the subnet mask.**

10 **Specify 192.168.1.254 for the default gateway.**



11 **Click the [OK] button.**

12 **Click the [OK] button in the [Local area connection properties] window.**

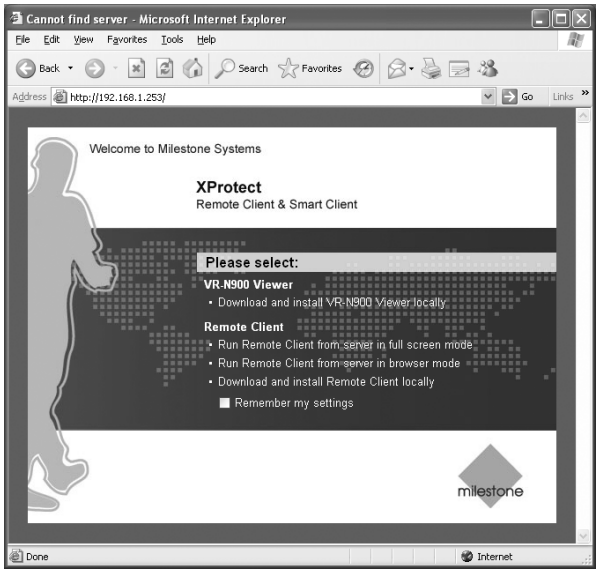
CAUTION

- Do not use the same IP address in the same network environment.
- Do not define multiple IP addresses to one NIC when specifying the computer network settings.

Installing the VR-N900 Viewer on Your Computer

Make sure that Microsoft .NET Framework 2.0, DirectX 9.0 or later and Microsoft Internet Explorer 6.0 have been installed on the PC where you are going to install the VR-N900 Viewer, as installation may otherwise fail.

1 **Open an Internet Explorer browser (version 6.0 or later) and enter the IP address of the VR-N900U (192.168.1.253).**



A welcome page will appear.

CAUTION

- Do not select Remote Client.

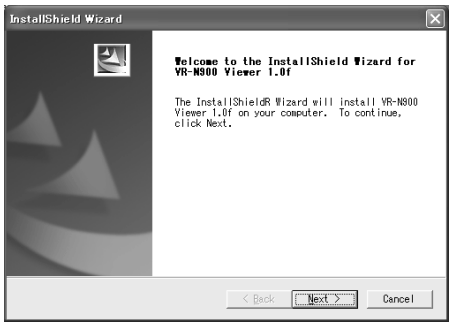
2 **Click the [Download and install VR-N900 Viewer locally] link.**

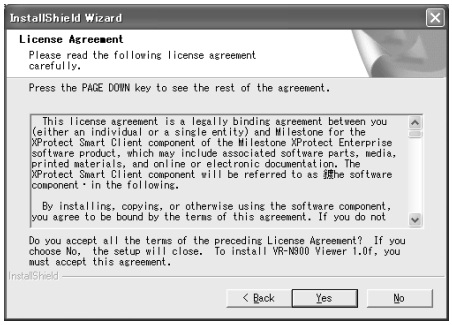
You will be asked whether you want to run or save the file.

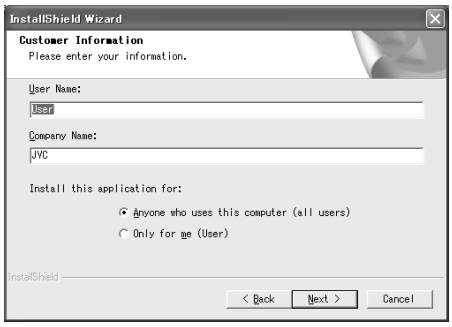
3 Click the [Run] button.

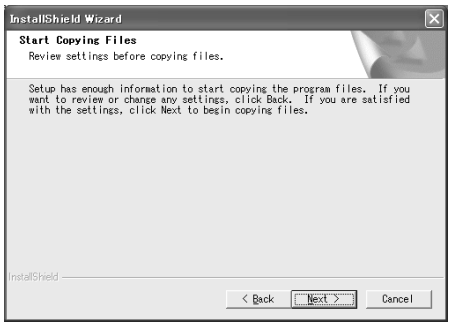
The VR-N900 Viewer Setup Wizard begins.

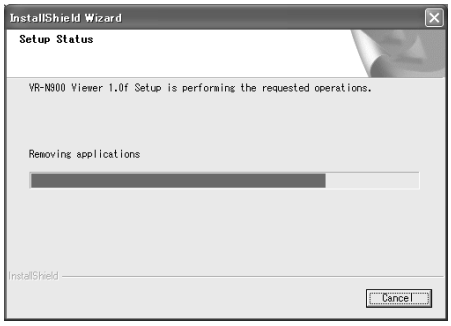
4 Click [Next] and follow the installation instructions.

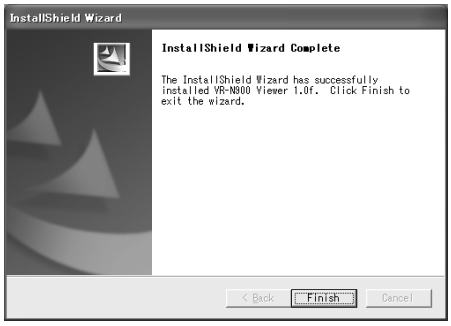












Installation ends and a shortcut to [VR-N900 Viewer] is created on the desktop.

Log In to the VR-N900 Viewer

1 Double-click the [VR-N900 Viewer] shortcut on your desktop.

If the [VR-N900 Viewer] desktop shortcut is not shown, select the [VR-N900 Viewer] from Windows' [Start] menu

The [VR-N900 Viewer] log in window will appear.

2 Specify your login information in the following fields.

Server address:

Type the IP address and port number of the VR-N900U. (example: http://192.168.1.253:80, where :80 is the port number.)

Type the IP address specified in the [Server Configuration] section of the Image Server settings.

Authentication:

Lets you select between three types of authentication. Select [Basic authentication].

Windows authentication (current user) with which you will be authenticated through your current Windows login.

Windows authentication with which you will be authenticated through your Windows login, but you will need to type your Windows user name and password.

Basic authentication, with which you must specify a user name and password for accessing the VR-N900U. When you log in to VR-N900U for the first time, select [Windows authentication].

User name: vr-n900

Password: vr-n900

User name:

If using [Windows authentication], type your Windows user name. If using [Basic authentication], type your surveillance system user name as defined in the [User Administration] of the Image Server settings. (☞ Page 64)

Password:

If using [Windows authentication], type your VR-N900U login password. If using [Basic authentication], type your surveillance system password exactly as defined in the [User Administration] of the Image Server settings. (☞ Page 64)

Remember password:

When using [Windows authentication] or [Basic authentication], you have the option of selecting [Remember password], in which case you can simply click [Connect] the next time you want to log in.

Auto-login:

If selected, you will automatically be logged in to the VR-N900 Viewer.

To modify the login information when [Auto-login] is set, click [Cancel] to modify the login information.

3 Click [Connect].

After a while, the [VR-N900 Viewer] window will open.

Note

- If you have logged in before, the VR-N900 Viewer will ask you if you want to keep the view(s) you last used.
  (Only for access from a surveillance computer)

  Main View:

  If the check box is selected, the view you last used in the VR-N900 Viewer's main window will be restored.

  Detached Views:

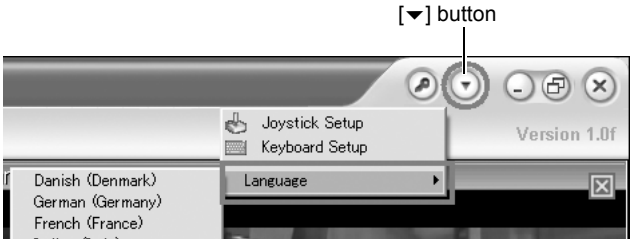
  If check box is selected, the views you last sent to [Primary Display], secondary displays and floating windows will be restored.

CAUTION

- When you log out in a state of maximum number of clients, it is necessary to wait several minutes next time you connect.
- When multiple computers are connected and audio is played back, the audio may be distorted.
- When you logout from a VR-N900U which is in the midst of connecting and reconnecting with another VR-N900U, reboot (☞ Page 11) the VR-N900 Viewer.

4 Select your language as the interface language.

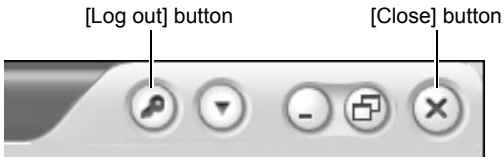
Click the [▾] button in the top right corner of the screen.
Select [language] from the menu that appears.
Select [your language] from the submenu that appears.
Click OK in the dialog that appears.
Click the [X] button in the top right corner to exit the VR-N900 Viewer. At next startup, the Viewer will start up in chosen language mode.



Using the VR-N900 Viewer

For using the VR-N900 Viewer, please refer to the following pages.
Viewing Live Images ☞ Page 12
Playing Back Recorded Images ☞ Page 16
Screen Setup ☞ Page 30

Log Out and Exit the VR-N900 Viewer



● **Logging out**

1 Click the [Log out] button.

You are logged out and the VR-N900 Viewer Log in window appears again.

● **Exiting**

1 Click the [Close] button.

The VR-N900 Viewer quits.

Compatible Equipment

Compatible Network Cameras

Function / Network Camera	JPG	PTZ	Audio	PTZ Joystick	MPG4	VMD Event
JVC VN-C20	●					
JVC VN-C655	●	●		●		
JVC VN-C625	●	●		●		
JVC VN-E4	●	●	●	●		
JVC VN-C215	●					
AXIS 206	●					
AXIS 207	●				●	●
AXIS 211	●		●		●	●
AXIS 216	●		●		●	●
AXIS 225	●				●	●
Verint S1700		●		●	●	
Verint S1704		●		●	●	
Verint S1708		●		●	●	
Verint S1900					●	
Verint S2700E					●	

Connecting a UPS

Connecting an uninterruptible power supply (UPS) to the hard disk will protect it from damage by automatically powering down all operations prior to switching off the power supply in the event of a power failure.

1 **Connect the UPS communication cable to the [SERIAL] port on the rear panel.**

2 **Connect the VR-N900U power cable to the UPS power output connector.**

3 **Switch on the power to the UPS, then switch on the power to the VR-N900U.**

CAUTION

- Consult your nearest JVC dealer for details on the UPS that can be used.
- Make sure the UPS communication cable is connected before switching on the power to the VR-N900U.
- Do not disconnect the communication cable when operations are being carried out.
- If a power failure occurs during archiving or formatting of the hard disk, operation of the equipment may be disabled even if it is connected to the UPS.
- The recorded images may not play back properly if they were not archived (☞ Page 56) before the power failure.

External Hard Disk Drives

The system can have additional hard disk drive upgrade of one 500 GB external hard disk drive, one 1 TB external hard disk drive and two 2 TB external hard disk drives (you cannot combine different capacities of hard disk drives). Follow the procedure below to format the hard disk.

1 Press the [OPERATE] button for two or more seconds to set operation to off mode.

2 Switch off the power switch on the rear panel.

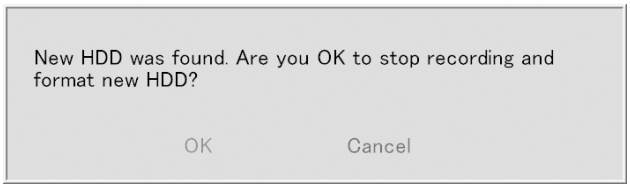
Make sure the power switch turned off.

3 Connect the external hard disk drive to the [SERIAL] port on the rear panel, then switch on the power.

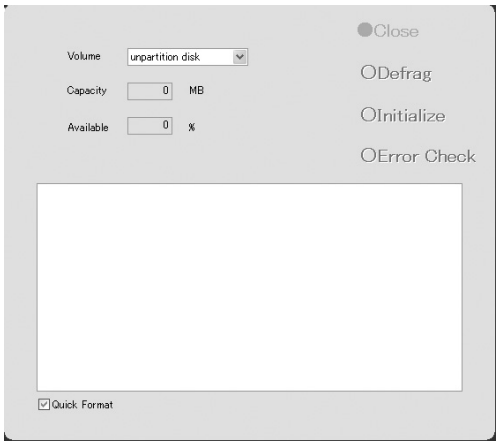
Make sure the power to the external hard disk drive has been switched on before switching on the VR-N900U. The system will not recognize the external drive unless it has been switched on beforehand.

4 Switch on the power to the VR-N900U.

- If the new hard disk drive is detected during recording, confirmation window will appear asking whether you want to stop recording and format the hard disk.



Click the [OK] button to automatically start up the HDD Utility. (☞ Page 63)
A confirmation window will appear only during recording.



5 Check the entry in the Volume field, then click the [Format] button.

The external hard disk drive will be formatted.
Check that [unformat disk], [unpartition disk] or [unknown partition] appear in the volume field. Selecting any other volume will result in the deletion of recorded data.

CAUTION

- Consult your nearest JVC dealer for details on the external hard disk drives that can be used.
- When the additional hard disk is connected, the recorded image of over ten seconds may be lost at the time of archiving.

Note

- It is recommended that a UPS is used to ensure stable operation of the system.
- It is impossible to disconnect an external hard disk from the VR-N900U and connect it to a personal computer to view the recorded images.

Recording Time Schedule

The actual recording time varies depending on the camera settings, input image contents and condition of the hard disk. Use the tables below as a guide to the recording time.

- **9 channel recording without audio recording or additional HDD upgrade**

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	-	-	17	34	57	178	380	985
	24	-	-	24	48	80	245	514	1321
	16	-	-	37	75	125	380	783	1994
	10	-	-	62	123	205	622	1267	3204
QVGA	27	-	-	21	42	70	215	454	1172
	15	-	-	40	80	133	406	837	2128
	8	-	-	78	155	259	783	1590	4011
	5	-	-	126	252	420	1267	2559	6432

- **9 channel recording with 2 channel audio recording and without additional HDD upgrade**

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	-	-	17	34	56	167	339	766
	24	-	-	24	47	78	226	445	958
	16	-	-	37	73	120	339	636	1273
	10	-	-	60	119	193	524	929	1635
QVGA	27	-	-	21	41	68	200	399	867
	15	-	-	40	78	128	361	672	1327
	8	-	-	76	149	240	636	1003	1887
	5	-	-	122	235	375	929	1485	2300

- **9 channel recording without audio recording and with one additional 1 TB HDD upgrade**

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	-	-	110	221	368	1110	2244	5645
	24	-	-	148	296	494	1488	2999	7534
	16	-	-	224	448	746	2244	4511	11314
	10	-	-	360	720	1199	3604	7232	18116
QVGA	27	-	-	131	263	438	1320	2663	6695
	15	-	-	239	478	796	2395	4813	12069
	8	-	-	451	901	1502	4511	9046	22651
	5	-	-	723	1445	2409	7232	14488	36256

- **9 channel recording with 2 channel audio recording and one additional 1 TB HDD upgrade**

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	-	-	110	218	361	1050	2017	4412
	24	-	-	147	292	482	1383	2609	5492
	16	-	-	221	438	719	2017	3686	7264
	10	-	-	353	695	1132	3056	5329	9580
QVGA	27	-	-	130	259	428	1237	2351	5030
	15	-	-	236	467	766	2138	3886	7570
	8	-	-	441	862	1397	3686	6255	10717
	5	-	-	698	1349	2152	5329	8457	13037

Recording time calculated in the chart is based on JPEG format.

24–168	169–720	721–2160	2161–
1 day to 1 week	1 week to 1 month	1 month to 3 months	Over 3 months

CAUTION

- Recording time may be reduced by approximately 10% depending on the condition of the hard disk and the images recorded.
- Recording time may be reduced depending on the age of the hard disk.

Others

• 4 channel recording without audio recording or additional HDD upgrade

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	14	28	42	85	141	430	884	2245
	24	19	38	58	115	192	581	1186	3001
	16	29	59	88	176	293	884	1791	4514
	10	47	95	142	284	474	1428	2880	7237
QVGA	27	17	34	51	102	169	514	1052	2665
	15	31	63	94	188	313	944	1912	4816
	8	60	119	179	357	595	1791	3606	9052
	5	96	192	287	575	958	2880	5785	14497

• 4 channel recording with 2 channel audio recording and without additional HDD upgrade

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	14	28	42	83	135	379	702	1372
	24	19	38	57	111	181	495	884	1626
	16	29	58	86	167	269	702	1186	1993
	10	47	92	137	263	417	1013	1589	2396
QVGA	27	17	34	50	98	161	444	806	1521
	15	31	61	91	178	286	740	1239	2050
	8	59	115	170	324	509	1186	1791	2569
	5	93	182	266	495	754	1580	2210	2880

• 4 channel recording without audio recording and with one additional 1 TB HDD upgrade

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	84	168	252	504	840	2527	5078	12730
	24	112	225	337	674	1124	3377	6778	16981
	16	169	338	507	1014	1691	5078	10179	25484
	10	271	542	813	1626	2711	8138	16301	40788
QVGA	27	100	200	299	599	998	2999	6022	15092
	15	180	361	541	1082	1804	5418	10859	27184
	8	339	678	1017	2035	3391	10179	20382	50991
	5	543	1086	1629	3259	5432	16301	32626	81600

• 4 channel recording with 2 channel audio recording and one additional 1 TB HDD upgrade

[hour]

Image Size	Data/Image [kB]	1 channel, 1 second per framerate/channel							
		30	15	10	5	3	1	0.5	0.2
VGA	32	84	167	249	492	806	2243	4057	7825
	24	112	222	332	652	1064	2891	5078	9252
	16	168	333	495	966	1560	4057	6778	11313
	10	268	528	782	1506	2391	5806	9045	13580
QVGA	27	99	198	295	581	950	2609	4640	8659
	15	179	354	527	1027	1656	4272	7074	11637
	8	334	656	969	1849	2905	6778	10179	14552
	5	529	1031	1509	2809	4286	9045	12534	16301

Recording time calculated in the chart is based on JPEG format.

24–168	169–720	721–2160	2161–
1 day to 1 week	1 week to 1 month	1 month to 3 months	Over 3 months

CAUTION

- Recording time may be reduced by approximately 10% depending on the condition of the hard disk and the images recorded.
- Recording time may be reduced depending on the age of the hard disk.

Default (Initial) Value List

Scheduler (Specifying a Scheduler, Page 24) [ ]: Factory default

Online	[Always online]
Speedup	[Always offline]
E-mail	[Always offline]
Patrolling	[Always offline]

Camera Record Settings ([Edit Device] - [Camera Settings], Page 42)

PTZ Camera Settings

Pan/Tilt/Zoom(PTZ)Camera is connected	[Not selected]
Camera Type	[Fixed]

Camera Administration (Camera Recording Setting, Page 28)

Speedup Settings

Framerate	[8]
Frame/	[Sec.]/Min./Hour

Recording Settings

Desired framerate	[8]
Frame/	[Sec.]/Min./Hour
Speedup	[Not selected]
When to store images in database	Always/Never/[Conditionally]
On motion	[Selected]
On event	[Not selected]
[3] seconds pre/post recordings on motion/event	

Database Settings (Database Settings, Page 54)

Max. records in database	[Selected] [108000]
Max. time span in database	[Not selected]
When the database is full, automatically archives	[Selected]
In case of database failure the following action should be taken	Repair, Scan, Delete if fails/Repair, Delete if fails/Repair, Archive if fails/Delete (no repair)/[Archive (no repair)]

PTZ Preset (Display the [PTZ Preset Positions] window, Page 41)

PTZ Preset Positions

Use preset positions from device	[Not selected]

Preset Position on Events

PTZ preset positions on events	[Not selected]

Auto PTZ Patrolling (Setup PTZ Patrolling, Page 43)

Patrol scheme	[My patrol scheme]

PTZ patrolling schedule settings

Stay at each position in the patrol schedule (sec.)	[5]
Time for each PTZ camera movement to complete (sec.)	[3]

PTZ Patrolling Actions on Detected Motion

Disable patrolling schedule if motion is detected	[Not selected]

Motion Detection (You can configure the camera's motion detection, Page 54)

Noise Sensitivity	[40]
Motion Sensitivity	[640]

Others

Other Settings (Other Camera Settings, Page 53)

Milestone XProtect Central Settings Section

Enable Milestone XProtect Central Connections	[Not selected]

Patrolling Settings

Resume Patrol after Manual or Event PTZ (sec.)	[30]

Logfile Settings

Logfile Path	[L:\Log\MS\]
Days to log	[5]

Event Recording Settings

Path	[D:\Events\]
Days to keep	[5]

Advanced

Don’t send e-mails on camera failures	[Not selected]
Start cameras on remote live request	[Selected]
Create default schedule for new cameras	[Selected]

E mail Settings

Enable E mail (Monitor)	[Not selected]

Archive Setup (Archiving, Page 57)

Delete database in the backup directory older than	[9999]
Send email on archive error	[Selected]
Daily archiving times	[12:00:00]
Name	[Set all]

[Properties] of the Camera (Adjusting Camera Settings, Page 34)

Image Quality	[Full]/Super High (for megapixel)/High/ Medium/Low
Frame Rate	[Unlimited]/ Medium/Low
Maintain Image Aspect Ratio	[Selected]
Update on Motion	[Not selected]
Sound on Motion Detection	[Always off]/ Always on
Sound on Event	[Always off]/ Always on

Joystick Setup (Customizing Joystick Setup, Page 35)

Disable all joysticks	[Not selected]

Axis Setup

	Invert	Absolute	Action
X Axis	[Not selected]	[Not selected]	PTZ Zoom/PTZ Tilt/[PTZ Pan]/No Action
Y Axis	[Not selected]	[Not selected]	PTZ Zoom/[PTZ Tilt]/PTZ Pan/No Action
Z Axis	[Not selected]	[Not selected]	[PTZ Zoom]/PTZ Tilt/PTZ Pan/No Action

Button Setup Action

Button1-12	[No Action]

Unit Setting (Unit Setting, Page 58)

Password	[None]
Auto Login	[Selected]

Live Viewing

Live Viewing Auto Start	[Selected]

Error Report

Dialog	[Selected]
Mail	[Selected]

Mail Server Settings

SMTP Server	Port [25]
POP Server	Port [110]
SMTP Authentication	[NONE]/SMTP Authentication /POP before SMTP

Emergency Recording

Time of Record	NONE/30seconds/[60seconds]/5minutes/ 10minutes/20minutes/Continue

Encode Mode	Variable File Size/[Average File Size]/ Constant File Size
Interpolate	[Not selected]

Serial Settings

Speed	1200/1800/2400/4800/[9600]/19200/ 38400
Data Length	7/[8]
Parity	[NONE]/ODD/EVEN
Stop Bit	[1]/2
Comment	[None]

OS Setting (OS Setting, Page 59)

Network adapter interface name

Realtek RTL8169/8110 Family Gigabit Ethernet NIC: LAN1 (Camera network)

Obtain an IP address automatically	[Not selected]
IP address	[192.168.0.253]
Subnet mask	[255.255.255.0]
Default gateway	[0.0.0.0]
Preferred DNS server	[0.0.0.0]
Alternative DNS server	[0.0.0.0]
Host name	[vr-n900]
DNS domain name	[None]

Enc Board Driver: Analog camera network

Obtain an IP address automatically	[Not selected]
IP address	[192.168.201.253]
Subnet mask	[255.255.255.0]
Default gateway	[0.0.0.0]
Preferred DNS server	[0.0.0.0]
Alternative DNS server	[0.0.0.0]
Host name	[vr-n900]
DNS domain name	[None]

Others

Intel® 8225xER PCI Adapter: LAN2 (Intranet)

Obtain an IP address automatically	[Not selected]
IP address	[192.168.1.253]
Subnet mask	[255.255.255.0]
Default gateway	[192.168.1.254]
Preferred DNS server	[0.0.0.0]
Alternative DNS server	[0.0.0.0]
Host name	[vr-n900]
DNS domain name	[None]

Date and Time Properties

Automatically synchronize with an Internet server	[Not selected]
Time zone	[(GMT) Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London]

Auto Detect Setting (Auto Detect Setting, Page 62)

IP Lease	[Enable]/Disable

IP Lease Parameter

Start Address	[192.168.1.100]
Unit	1 unit – [10 units] – 99 units
Subnet mask	[255.255.255.0]
Gateway	[192.168.0.254]

DNS server

Primary	[192.168.0.253]
Secondary	[192.168.0.252]
Domain Name	[None]
Lease Time Limit	[No]/Yes
Client	[Only Camera]/Any Client
Analog Input	0CH/1CH/2CH/3CH/[4CH] [NTSC]/PAL
Reserve MAC Address	[None]

Image Server Setting (Image Server Setting, Page 64)

Server Configuration

Name	[Server]
Port	[80]
Enable Outside Access	[Not selected]
Max. number of clients	[11]

User Administration

Full access for all users	[Selected]

Log Files

Days to log	[10]

Audit log

Enable Audit Logging	[Not selected]

Language Support and XML Encoding	[Western (European) (iso-8859-1)]

User Administration (Image Server Setting, Page 65)

User	Password	Type
[vr-n900]	[vr-n900]	[Basic user]
[Administrator]	[None]	[Windows or Active Directory user]

Troubleshooting

Problem	Solution
Power cannot be turned on.	Check that the power cable has been plugged in correctly.
	Check that the power switch on the rear panel is switched on.
Camera is not automatically detected.	Follow the instructions in the camera's user manual and check the DHCP settings.
Unable to operate the system by pressing the [REC] or [PLAY] button.	Check that operation lock is not engaged.
No images are recorded with recording control mode.	Check the settings in the [Camera Record Setting].
	Check that the scheduler is set to online.
	Check that the camera is in recording control mode.
Unable to play back sound.	Check that audio for the camera device is set to [Enable] in the [Camera Record Setting] window.
Unable to operate	While holding the [FUNCTION] button of front panel, press the [OPERATE] button for more than 7 seconds to forced power OFF. **CAUTION** • The recorded images that are not archived (☞ Page 55) before forced power OFF may not play back properly.

Solutions to warning indicator light up

Error message	Possible cause and solution
WARNING: HDD 0 (1)	The HDD seems to be no longer serviceable. Replacement is recommended.
	Consult to your nearest JVC dealer.
OVERHEATED!	Check the temperature of the operating environment.
	Check that the fan unit operates properly.
	If the temperature of the operating environment is appropriate, consult to your nearest JVC dealer.
ENCODER ERROR(format)	Abnormality with the input signal. Check the entered image signal.
ENCODER ERROR (xxx)	Other abnormality. Consult to your nearest JVC dealer.

NETWORK VIDEO RECORDER VR-N900U

JVC

©2007 Victor Company of Japan, Limited

LST0497-001A